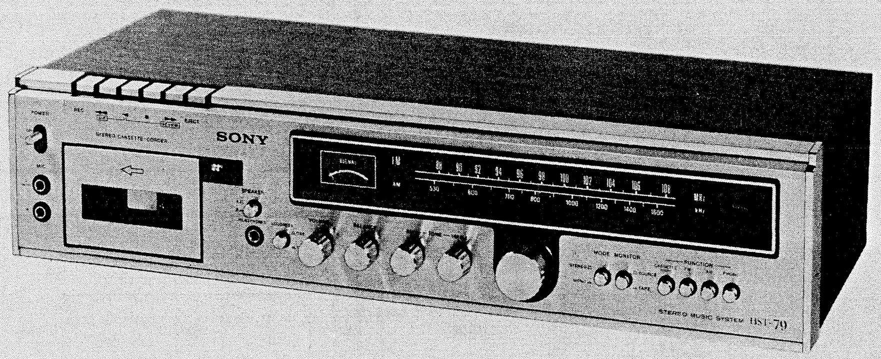
HST-79

USA Model



- PAGE 2~26: RECEIVER
- PAGE 27~46: CASSETTE RECORDER

STEREO MUSIC SYSTEM

SPECIFICATIONS

RECEIVER SECTION

Circuit system:	FM Stereo, FM/AM superheterodyne SEPP OTL power amplifier	
Tuning range:	FM 87.5 MHz–108 MHz AM 530 kHz–1605 kHz	
Antennas:	FM: 300 Ω balanced terminals, equipped with ac line antenna AM: Built-in ferrite-rod antenna, external antenna terminal	
Inputs: (sensitivity/impedance)	PHONO	6.2 mV/47 kΩ
	TAPE	440 mV/50 kΩ
Outputs: (output level/impedance)	REC OUT	250 mV/10 kΩ
	HEADPHONE	Accepts headphones of 8-ohms or more.
	SPEAKER	Accept 8-ohm speakers.
Frequency response:	TAPE	40 Hz–40 kHz at 1 W output
Tone controls:	BASS	±10 dB at 100 Hz
	TREBLE	±10 dB at 10 kHz
Loudness control: (att. -30 dB)	+10 dB at 100 Hz +3 dB at 10 kHz	
S/N ratio:	PHONO	60 dB (at 6.2 mV input)
	TAPE	70 dB (at 440 mV input)

CASSETTE RECORDER SECTION

Tape speed:	4.8 cm/s ($1\frac{7}{8}$ ips)
Frequency response:	40 Hz–10 kHz
Wow and flutter:	Less than 0.3 % wrms
Mic inputs:	Accept low impedance microphones.

GENERAL

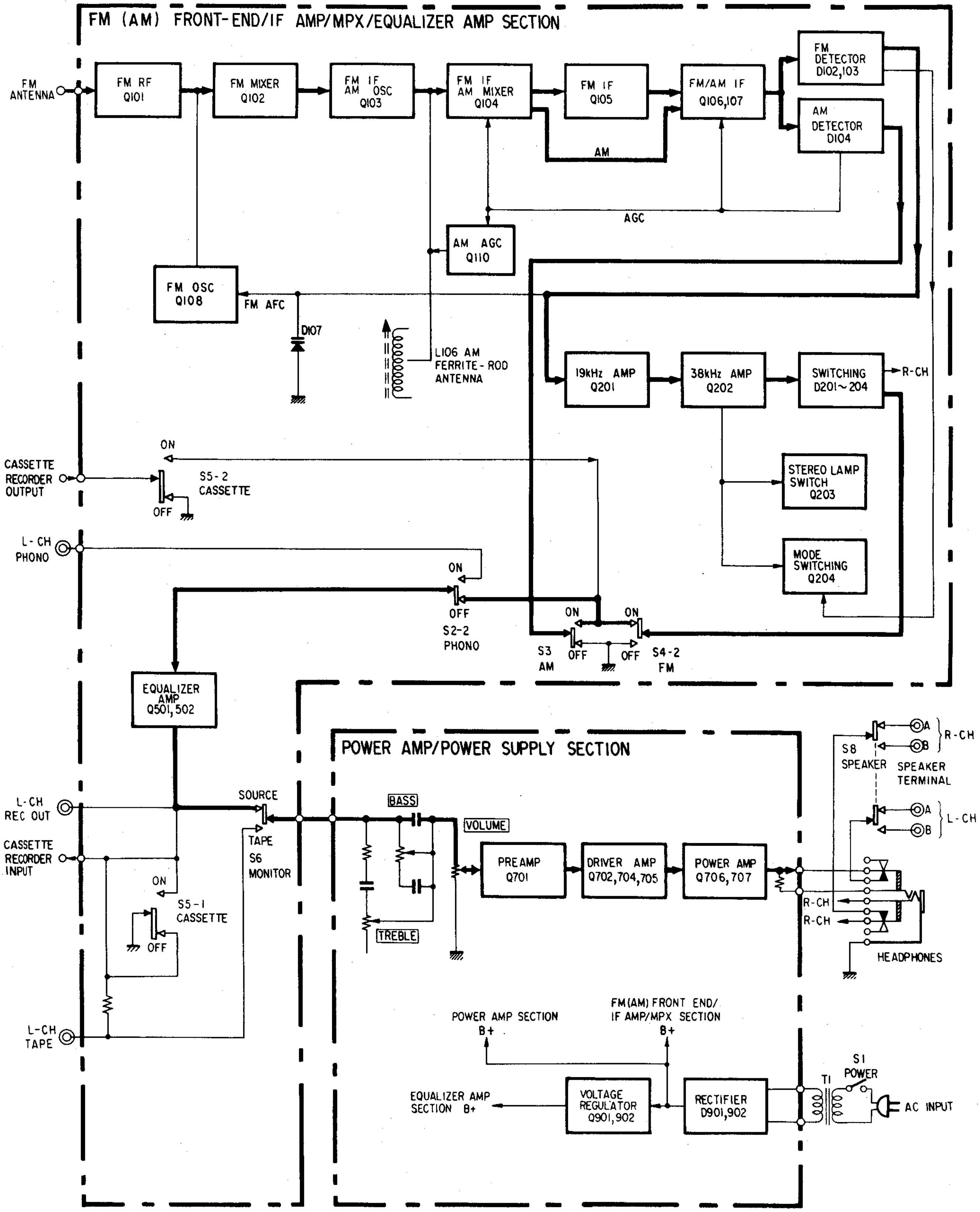
Power requirements:	120 V ac, 60 Hz
Power consumption:	45 W
Accessory ac outlet:	1 unswitched, 250 W max.
Dimensions:	600(w) x 140(h) x 260(d) mm $23\frac{5}{8}$(w) x $5\frac{1}{2}$(h) x $10\frac{1}{4}$(d) inches
Net weight:	6.8 kg (15 lb)
Shipping weight:	8.4 kg (18 lb 10 oz)

SONY®

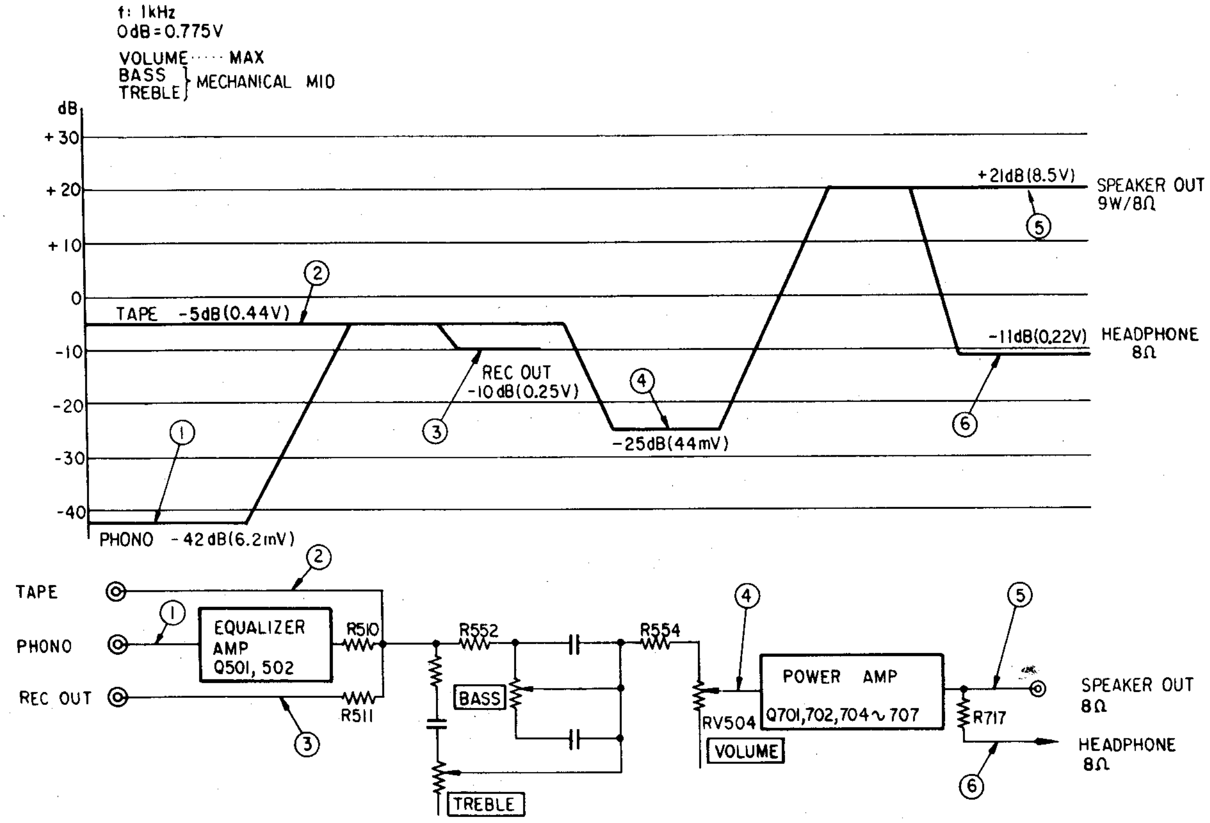
SERVICE MANUAL

SECTION 1
BLOCK DIAGRAMS

1-1. BLOCK DIAGRAM (R-CH is omitted.)


FM (AM) FRONT-END/IF AMP/MPX/EQUALIZER AMP SECTION
FM ANTENNA
FM RF Q101
FM MIXER Q102
FM IF AM OSC Q103
FM IF AM MIXER Q104
FM IF Q105
FM/AM IF Q106,107
FM DETECTOR D102,103
AM DETECTOR D104
AM
AGC
AM AGC Q110
FM OSC Q108
FM AFC
D107
L106 AM FERRITE-ROD ANTENNA
19kHz AMP Q201
38kHz AMP Q202
SWITCHING D201~204
R-CH
STEREO LAMP SWITCH Q203
MODE SWITCHING Q204
CASSETTE RECORDER OUTPUT
ON
S5-2 CASSETTE
OFF
L-CH PHONO
ON
OFF
S2-2 PHONO
ON
ON
S3 AM
OFF
OFF
S4-2 FM
EQUALIZER AMP Q501,502
L-CH REC OUT
CASSETTE RECORDER INPUT
ON
S5-1 CASSETTE
OFF
L-CH TAPE
SOURCE
TAPE
S6 MONITOR
POWER AMP/POWER SUPPLY SECTION
BASS
VOLUME
TREBLE
PREAMP Q701
DRIVER AMP Q702,704,705
POWER AMP Q706,707
S8 SPEAKER
SPEAKER TERMINAL
A
B
R-CH
A
B
L-CH
R-CH
R-CH
HEADPHONES
POWER AMP SECTION B+
FM(AM) FRONT END/ IF AMP/MPX SECTION B+
EQUALIZER AMP SECTION B+
VOLTAGE REGULATOR Q901,902
RECTIFIER D901,902
T1
S1 POWER
AC INPUT

1-2. LEVEL DIAGRAM


f: 1kHz
0dB=0.775V
VOLUME ····· MAX
BASS, TREBLE } MECHANICAL MID
dB
+30
+20
+10
0
-10
-20
-30
-40
TAPE -5dB(0.44V)
PHONO -42dB(6.2mV)
REC OUT -10dB(0.25V)
-25dB(44mV)
+21dB(8.5V)
SPEAKER OUT 9W/8Ω
-11dB(0.22V)
HEADPHONE 8Ω
①
②
③
④
⑤
⑥
TAPE
PHONO
REC OUT
EQUALIZER AMP Q501, 502
R510
R511
R552
BASS
TREBLE
R554
RV504
VOLUME
POWER AMP Q701,702,704∿707
R717
SPEAKER OUT 8Ω
HEADPHONE 8Ω

SECTION 2
REMOVAL

2-1. CASE REMOVAL

1. Remove ❶ , ❷ and ❸ .
2. Lift the case (❹).
3. Disconnect ❺ .
4. Remove the case (❹ and ❻).

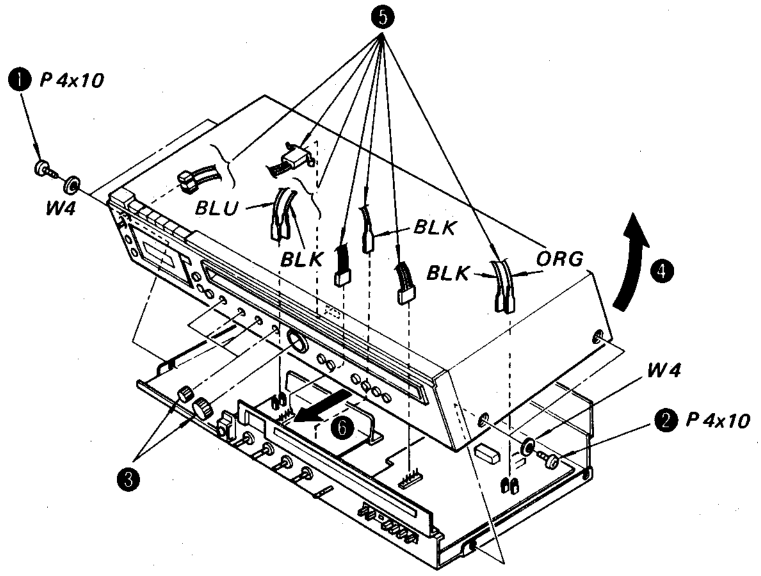

❺
❶ P4x10
W4
BLU
BLK
BLK
BLK
BLK
ORG
❹
W4
❷ P4x10
❻
❸

Fig. 2-1.

2-2. POWER AMP/POWER SUPPLY BOARD REMOVAL

Remove ❶ and ❷ .

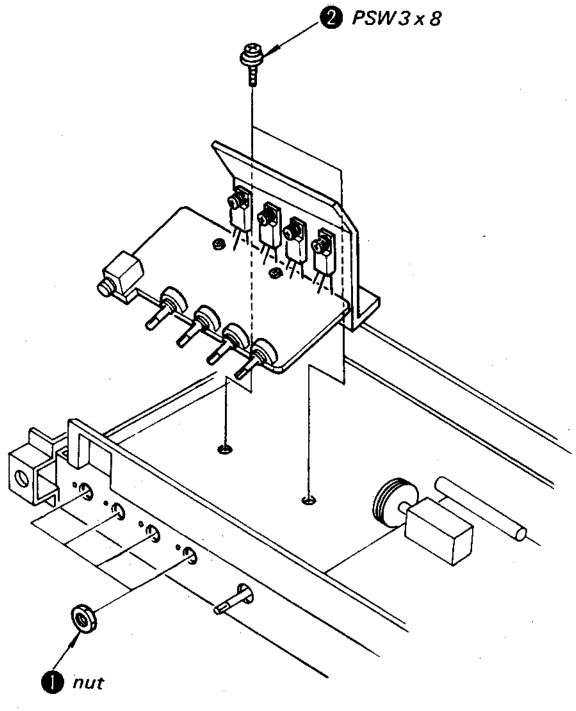

❷ PSW3x8
❶ nut

Fig. 2-2.

2-3. FM (AM) FRONT-END/IF AMP/MPX/EQUALIZER AMP BOARD REMOVAL

1. Tape and fix the dial cord at ❶ and ❷.
2. Remove the dial cord from the pulley at ❸.
3. Remove ❹ and ❺.
4. Pull the circuit board toward ❻.
   Then, lift up the board.

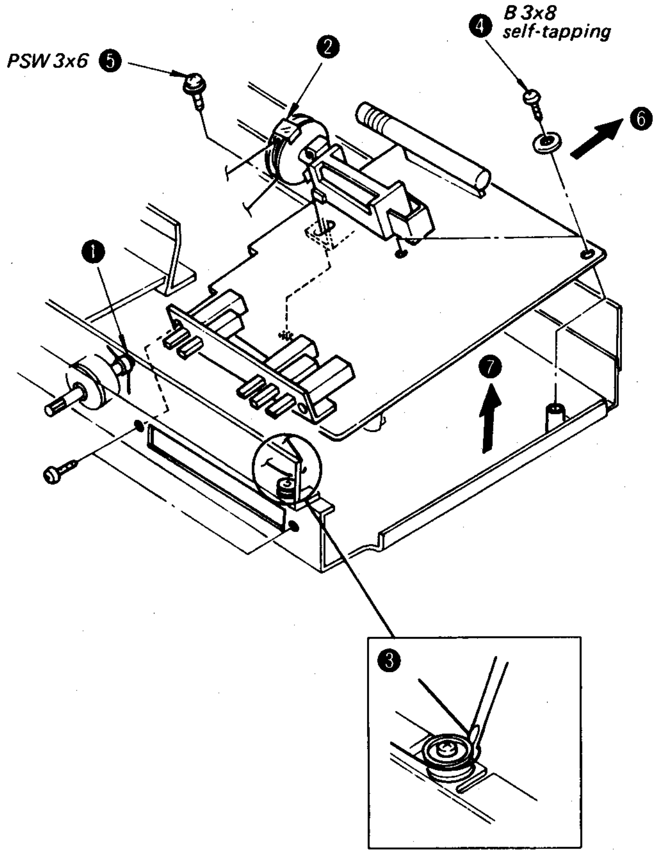
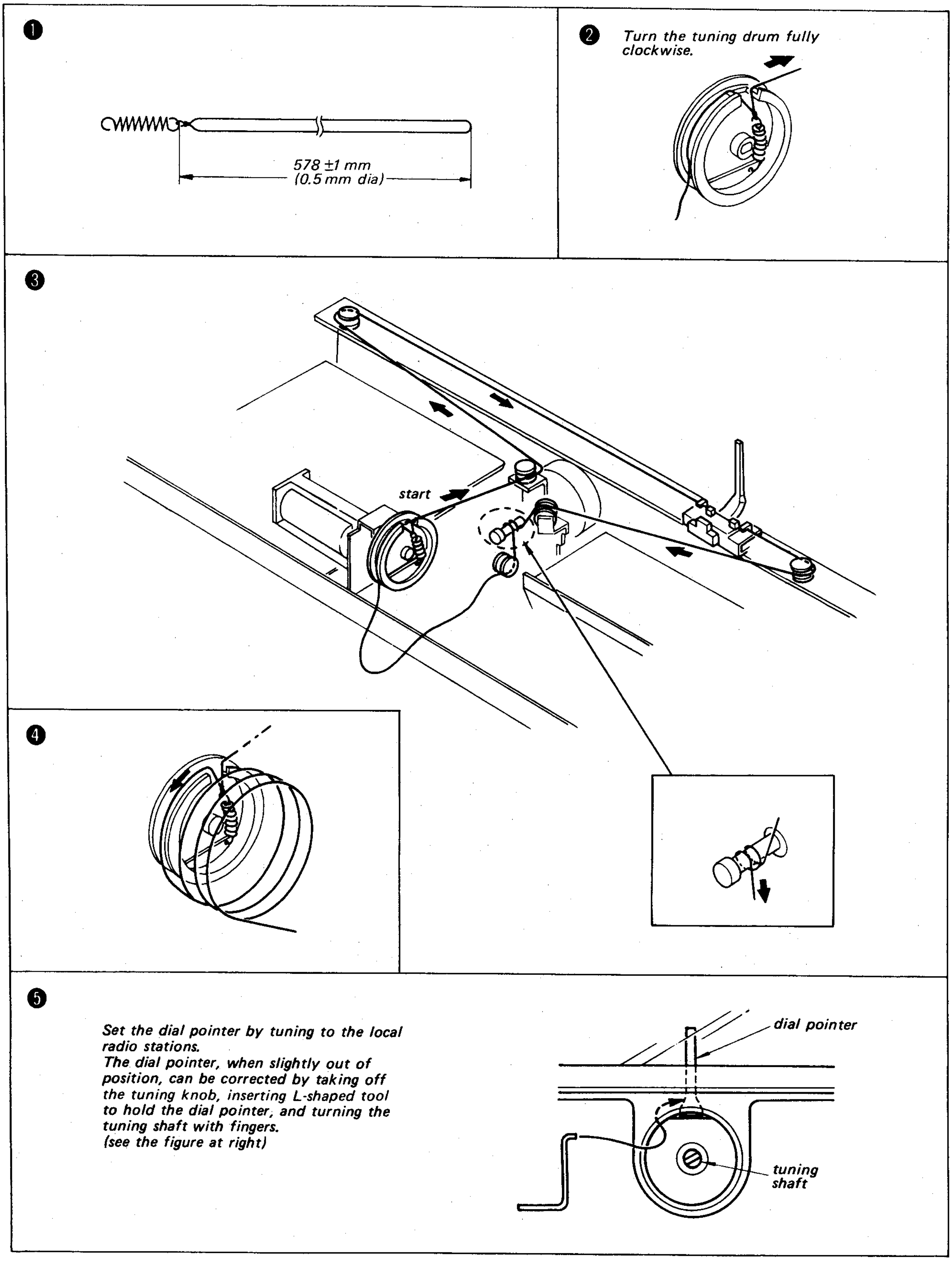

❹ B 3x8
self-tapping
❷
PSW 3x6 ❺
❻
❶
❼
❸

Fig. 2-3.

2-4. DIAL CORD STRINGING


❶
578 ±1 mm
(0.5 mm dia)
❷
❸
start
❹
❺
dial pointer
tuning shaft

Turn the tuning drum fully clockwise.

Set the dial pointer by tuning to the local radio stations.
The dial pointer, when slightly out of position, can be corrected by taking off the tuning knob, inserting L-shaped tool to hold the dial pointer, and turning the tuning shaft with fingers.
(see the figure at right)

Fig. 2-4.

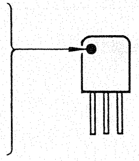
SECTION 3
ADJUSTMENTS

3-1. FM IF ALIGNMENT

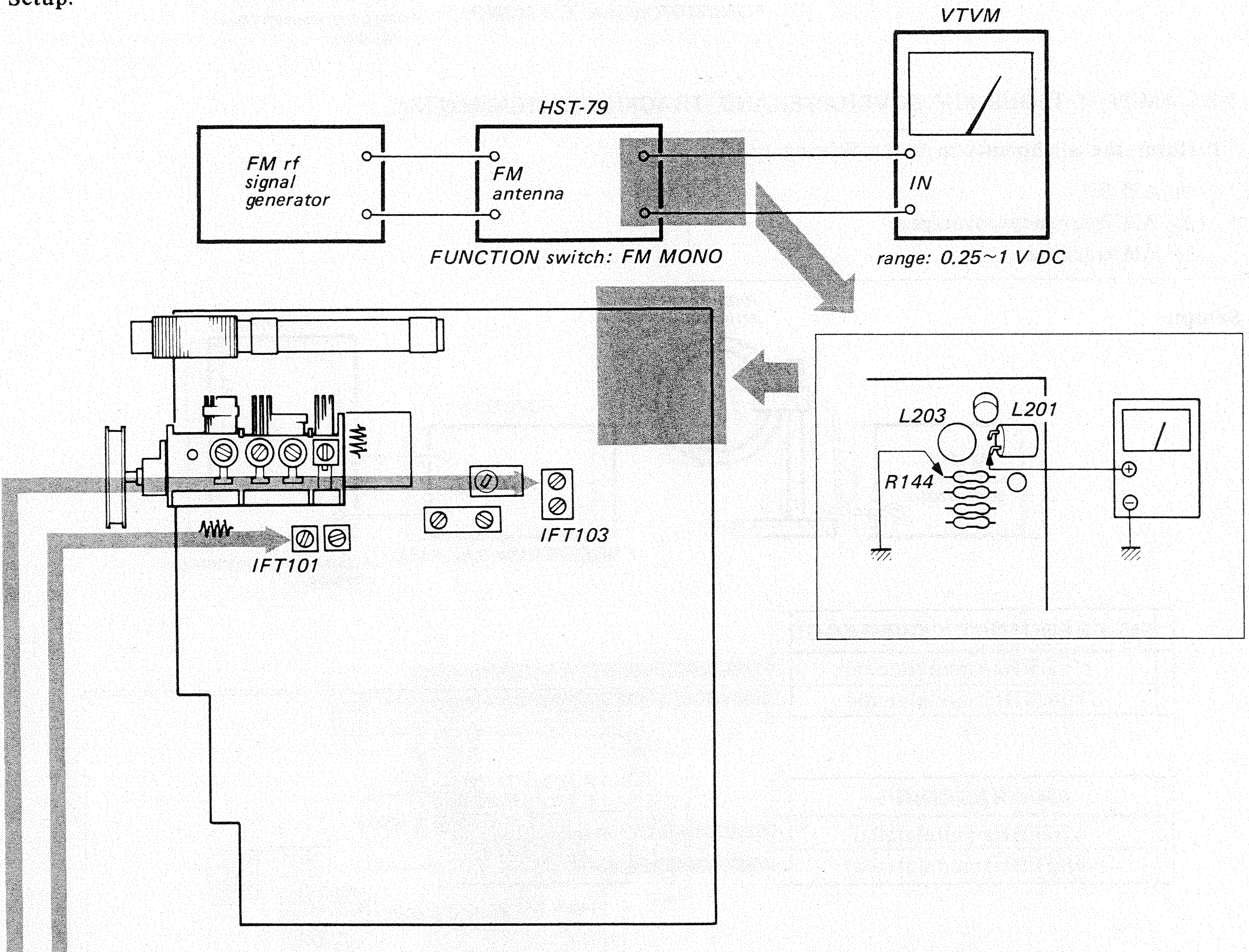
The ceramic filters used in the fm i-f circuit are color coded according to their specified center frequencies.

FM IF CERAMIC FILTERS

Part No.	Specified Center Freq.	Color
1-527-220-11	10.70 MHz	red
1-527-220-21	10.67 MHz	blue
1-527-220-31	10.73 MHz	orange
1-527-220-41	10.64 MHz	black
1-527-220-51	10.76 MHz	white



Setup:


VTVM
HST-79
FM rf signal generator
FM antenna
IN
L203
L201
R144
IFT101
IFT103

FUNCTION switch: FM MONO

range: 0.25~1 V DC

FM IF

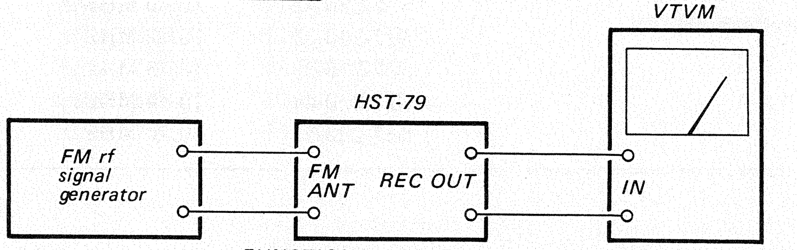
Step	Signal Generator (frequency = center freq. of ceramic filter)	Procedure
1	modulated FM 400 Hz 22.5 kHz deviation (30 %)	Tune the set to the SG signal
2		Adjust and obtain the maximum VTVM reading
3		Repeat Step 2 a few times.
4	unmodulated	Adjust and obtain DC 0V reading.

3-2. FM FREQUENCY COVERAGE AND TRACKING ALIGNMENTS

Perform the alignments in the following order:

(1) FM IF (see page 7)
(2) FM frequency coverage
(3) FM tracking

Setup:


VTVM
HST-79
FM rf signal generator
FM ANT
REC OUT
IN

FUNCTION switch: FM MONO

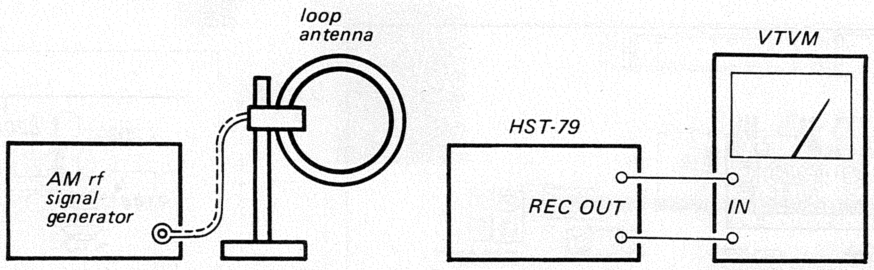
Adjust for maximum reading.

3-3. AM IF, FREQUENCY COVERAGE, AND TRACKING ALIGNMENTS

Perform the alignments in the following order:

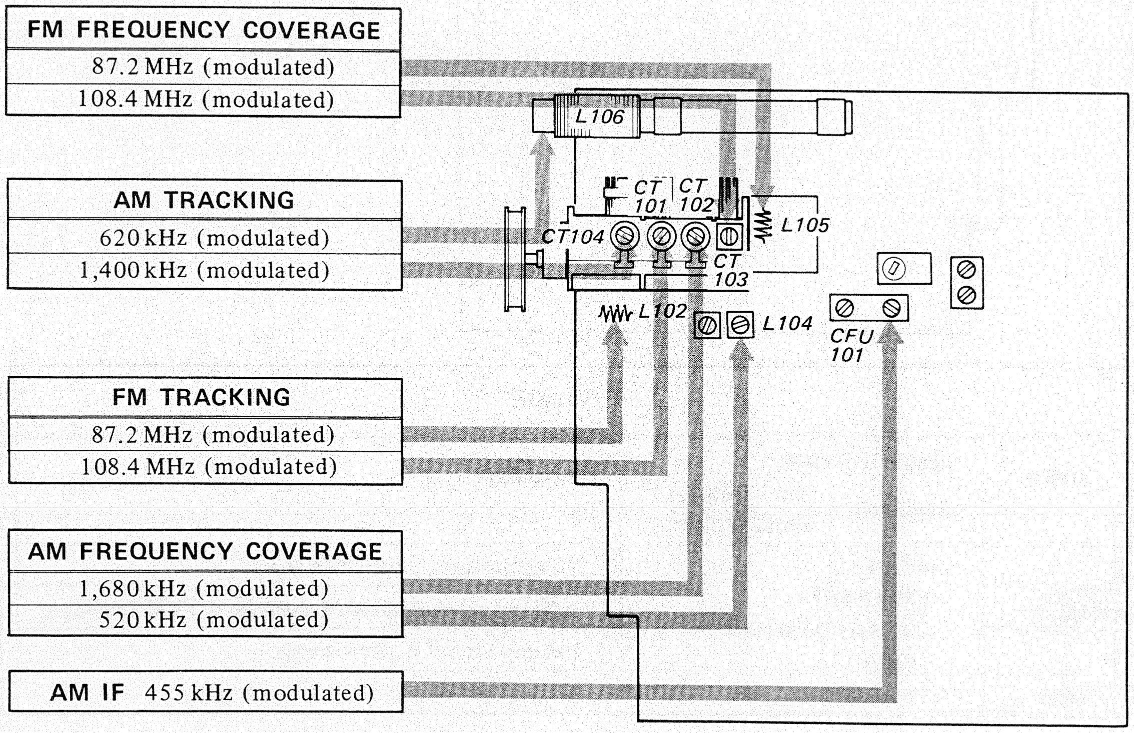
(1) AM IF
(2) AM frequency coverage
(3) AM tracking

Setup:


loop antenna
VTVM
HST-79
AM rf signal generator
REC OUT
IN

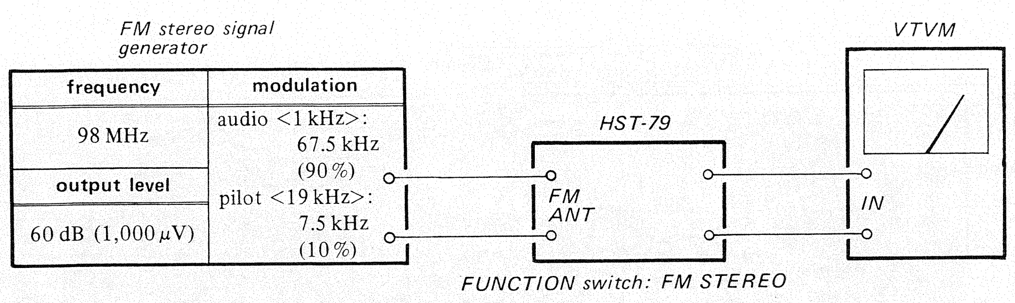
FUNCTION switch: AM

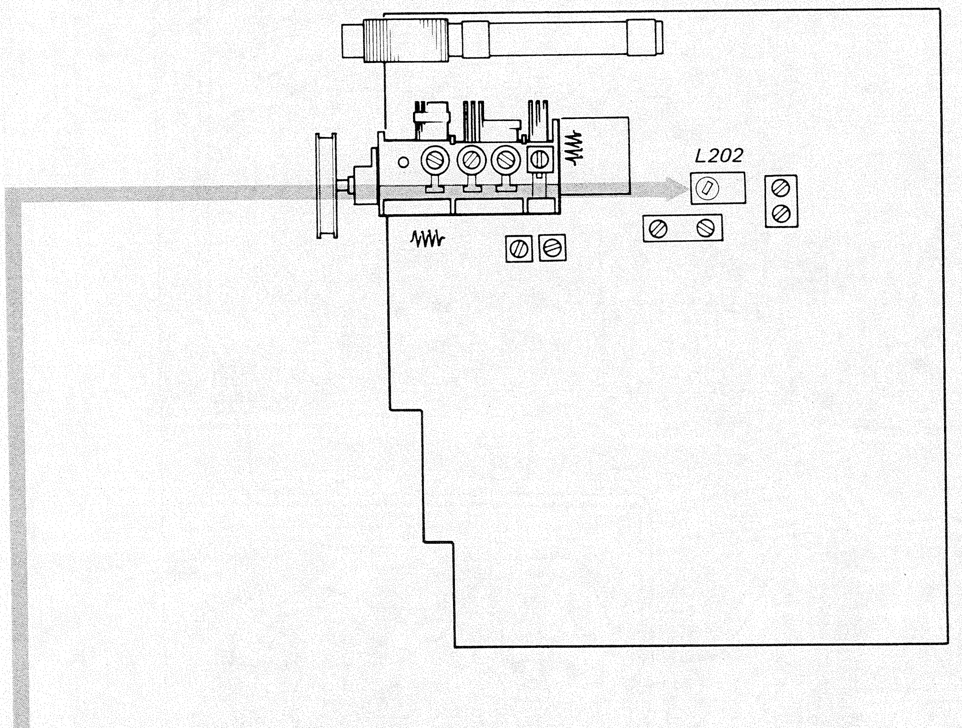
Adjust for maximum reading.


FM FREQUENCY COVERAGE
87.2 MHz (modulated)
108.4 MHz (modulated)
AM TRACKING
620 kHz (modulated)
1,400 kHz (modulated)
FM TRACKING
87.2 MHz (modulated)
108.4 MHz (modulated)
AM FREQUENCY COVERAGE
1,680 kHz (modulated)
520 kHz (modulated)
AM IF 455 kHz (modulated)
L106
CT 101
CT 102
CT104
CT 103
L105
L102
L104
CFU 101

3-4. FM SEPARATION ALIGNMENT

Setup:


FM stereo signal generator
frequency
98 MHz
output level
60 dB (1,000 μV)
modulation
audio <1 kHz>: 67.5 kHz (90 %)
pilot <19 kHz>: 7.5 kHz (10 %)
HST-79
FM ANT
VTVM
IN
FUNCTION switch: FM STEREO



FM STEREO SEPARATION

Step	FM SG signal mode	VTVM connection	Read VTVM	Remarks
1	L-CH	L-CH REC OUT	Ⓐ dB	Adjust and obtain the maximum reading.
2	R-CH	L-CH REC OUT	Ⓑ dB	
3	R-CH	R-CH REC OUT	Ⓒ dB	
4	L-CH	R-CH REC OUT	Ⓓ dB	
5	Check that (Ⓐ − Ⓑ) = (Ⓒ − Ⓓ) > 25 dB. If the readings do not yield a satisfactory result, do the FM IF ALIGNMENT (page 7) and/or readjust L202 (slightly move from the position set at step 1) and take the VTVM reading, again.			

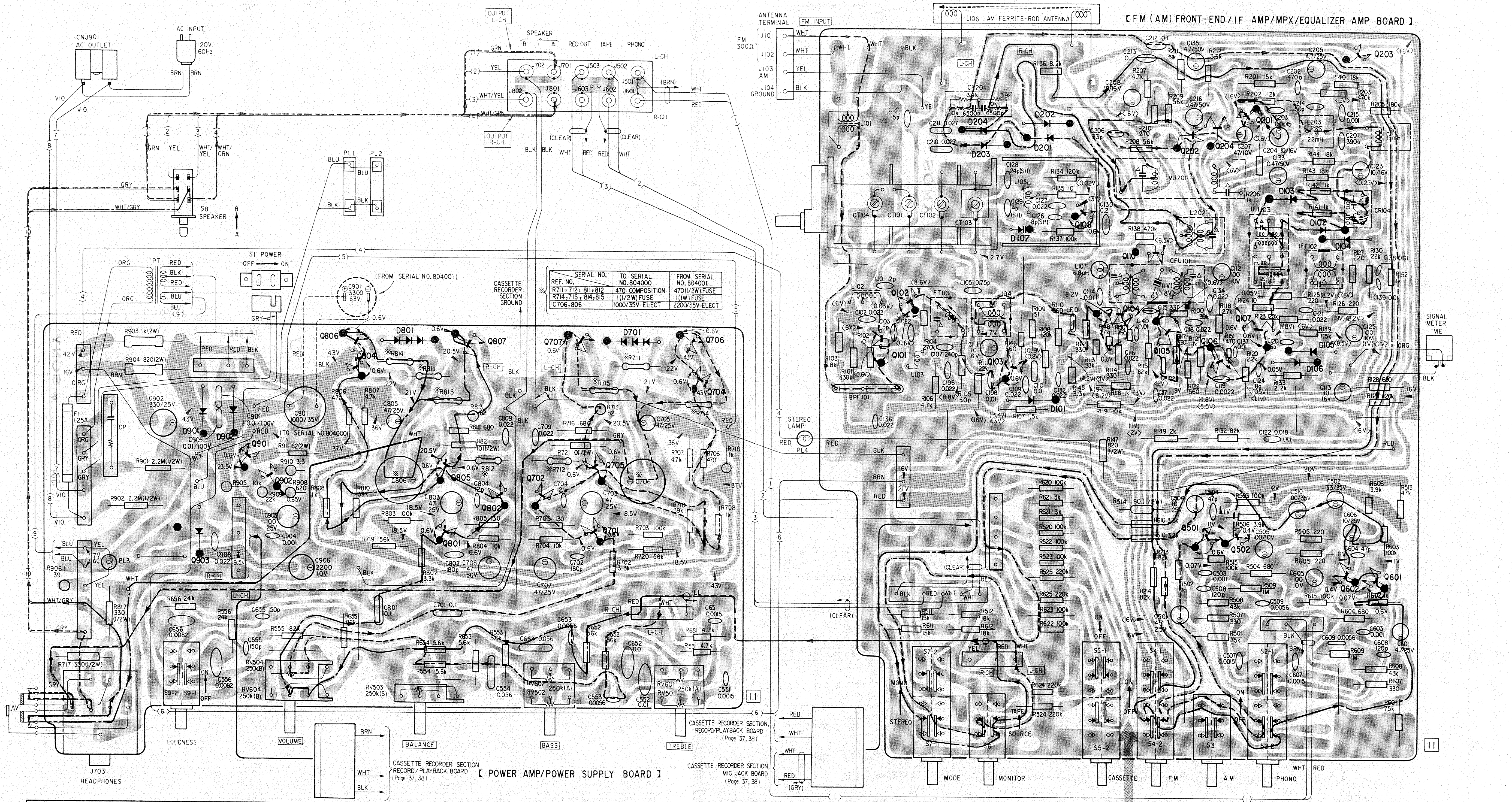
MEMO

SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

F-M (A-M) FRONT-END/I-F AMP/MPX/EQUALIZER AMP board
POWER AMP/POWER SUPPLY board

— Component Side —

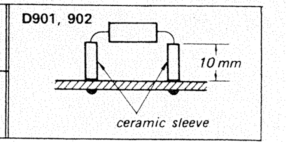

[FM (AM) FRONT-END/IF AMP/MPX/EQUALIZER AMP BOARD]
[POWER AMP/POWER SUPPLY BOARD]
CNJ901 AC OUTLET
AC INPUT 120V 60Hz
OUTPUT L-CH
OUTPUT R-CH
SPEAKER B A
REC OUT
TAPE
PHONO
ANTENNA TERMINAL
FM INPUT
FM 300Ω J101 J102
J103 AM
J104 GROUND
L106 AM FERRITE-ROD ANTENNA
S8 SPEAKER
S1 POWER OFF ON
(FROM SERIAL NO. 804001)
CASSETTE RECORDER SECTION GROUND
STEREO LAMP PL4
SIGNAL METER ME
J703 HEADPHONES
LOUDNESS
VOLUME
BALANCE
BASS
TREBLE
CASSETTE RECORDER SECTION RECORD/PLAYBACK BOARD (Page 37, 38)
CASSETTE RECORDER SECTION MIC JACK BOARD (Page 37, 38)
MODE
MONITOR
SOURCE
STEREO
CASSETTE
FM
AM
PHONO

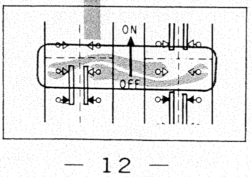
SERIAL NO. / REF. NO.	TO SERIAL NO. 804000	FROM SERIAL NO. 804001
R711, 712, 811, 812	470 COMPOSITION	470(1/2W) FUSE
R714, 715, 814, 815	1(1/2W) FUSE	1(1W) FUSE
C706, 806	1000/35V ELECT	2200/35V ELECT

Q	901 806 804 805 801 807 802 702 707 705 701 706 704
D	903 901 904 902 801 701

Q	101 102 103 108 104 110 105 202 204 501 106 502 201 107 203 602 601
D	204 203 107 202 101 201 103 106 105 102 104

■	parts mounted on the conductor side	- - -►- - -	signal path (L-CH)	(BRN)	color of the sleeve
▨	B+ pattern	-·-►-·-	signal path (R-CH)	⬚	A bold line by a coil (or a transformer) shows the face of the coil (or a transformer) with its stencilled part number.


D901, 902
10 mm
ceramic sleeve

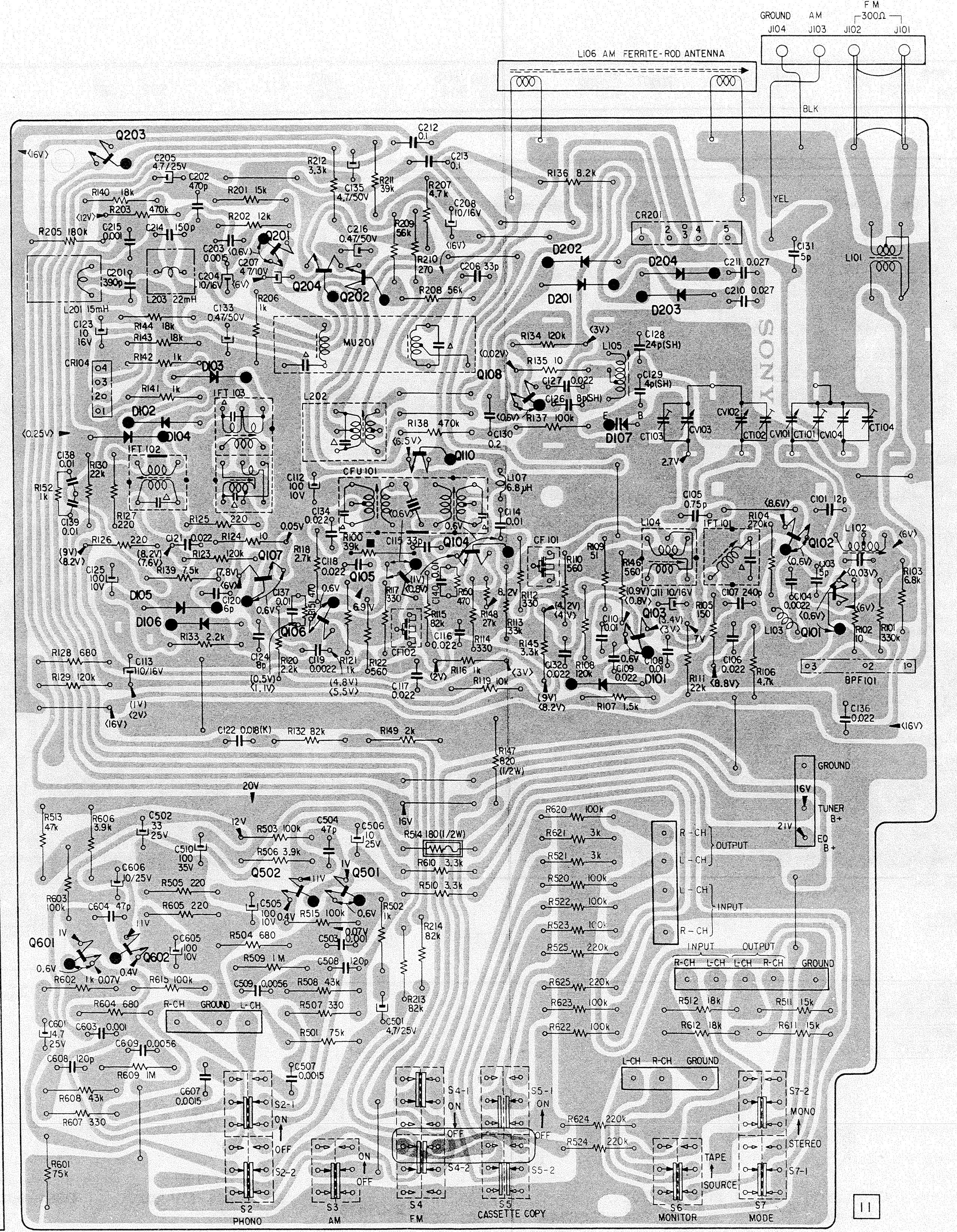


: printed circuit board on the switches

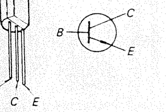
4-2. MOUNTING DIAGRAM F-M (A-M) FRONT-END/I-F AMP/MPX/EQUALIZER AMP board

– Conductor Side –

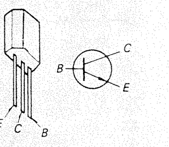
D	Q
	203
202 204 201 203	201 204 202
103	108
102 104 107	110
	102 104
	107 105
105 106	101 106 103
101	
	502 501
	601 602



GROUND J104
AM J103
FM 300Ω J102 J101
L106 AM FERRITE-ROD ANTENNA
BLK
YEL
SONY
Q203
Q201
Q202
Q204
D201
D202
D203
D204
CR201
L101
MU201
L202
L201 15mH
L203 22mH
CR104
D102
D103
D104
D105
D106
D107
IFT 102
IFT 103
CFU101
CF101
IFT101
BPF101
L102
L103
L104
L105
L107 6.8μH
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q108
Q110
D101
CT101
CT102
CT103
CT104
CV101
CV102
CV103
CV104
GROUND
16V
TUNER B+
EQ B+
21V
20V
R-CH
L-CH
OUTPUT
INPUT
Q501
Q502
Q601
Q602
R-CH GROUND L-CH
S2 PHONO
S3 AM
S4 FM
S5 CASSETTE COPY
S6 MONITOR
S7 MODE
ON
OFF
TAPE
SOURCE
MONO
STEREO
11



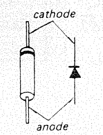
Q101~108
Q110 } 2SC710
D107



Q201,202 } 2SC633A
204

Q203 } 2SC634A
502,602

Q501,601 2SC631A



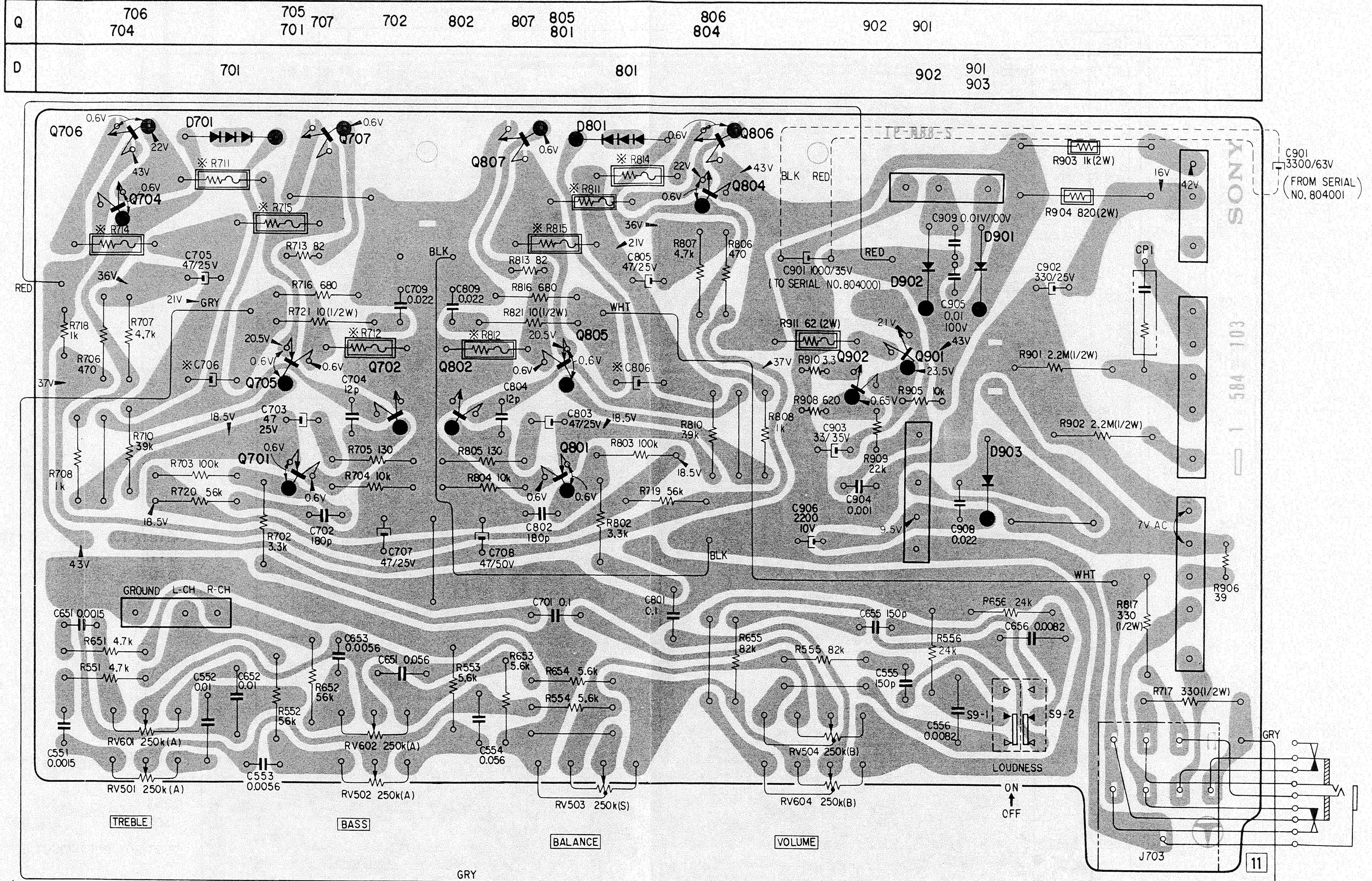
cathode
anode

D101 1S1555

D102~106 } 1T22A
201~204

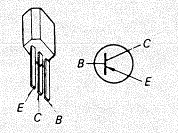
4-3. MOUNTING DIAGRAM POWER AMP/POWER SUPPLY board

– Conductor Side –

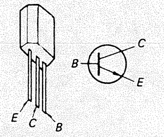

Q
706
704
705
701
707
702
802
807
805
801
806
804
902
901
D
701
801
902
901
903
Q706
0.6V
22V
43V
Q704
D701
Q707
0.6V
※R711
※R715
※R714
R713 82
C705 47/25V
36V
21V
GRY
RED
R718 1k
R707 4.7k
R706 470
37V
※C706
R716 680
R721 10(1/2W)
※R712
20.5V
Q705
Q702
C704 12p
C709 0.022
C703 47 25V
18.5V
R710 39k
R703 100k
Q701
R705 130
R704 10k
R720 56k
R708 1k
R702 3.3k
C702 180p
C707 47/25V
43V
BLK
Q807
D801
Q806
※R814
22V
43V
Q804
※R811
※R815
R813 82
36V
21V
C805 47/25V
R807 4.7k
R806 470
C809 0.022
R816 680
R821 10(1/2W)
WHT
※R812
Q805
Q802
C804 12p
※C806
C803 47/25V
18.5V
R810 39k
R803 100k
Q801
R805 130
R804 10k
R719 56k
C802 180p
R802 3.3k
C708 47/50V
BLK
RED
C901 1000/35V (TO SERIAL NO.804000)
R911 62(2W)
37V
R910 3.3
Q902
Q901
21V
43V
23.5V
R908 620
0.65V
R905 10k
R808 1k
C903 33/35V
R909 22k
C906 2200 10V
C904 0.001
9.5V
D903
C908 0.022
D902
D901
C909 0.01V/100V
C905 0.01 100V
R903 1k(2W)
R904 820(2W)
16V
42V
C901 3300/63V (FROM SERIAL NO.804001)
CP1
C902 330/25V
R901 2.2M(1/2W)
R902 2.2M(1/2W)
7V AC
WHT
R906 39
R817 330 (1/2W)
SONY
1-584-103
GROUND L-CH R-CH
C651 0.0015
R651 4.7k
R551 4.7k
C552 0.01
C652 0.01
C653 0.0056
C651 0.056
R652 56k
R552 56k
R553 5.6k
R653 5.6k
R654 5.6k
R554 5.6k
C554 0.056
C551 0.0015
RV601 250k(A)
RV501 250k(A)
C553 0.0056
RV602 250k(A)
RV502 250k(A)
C701 0.1
C801 0.1
RV503 250k(S)
R655 82k
R555 82k
C655 150p
C555 150p
R656 24k
R556 24k
C656 0.0082
C556 0.0082
S9-1
S9-2
RV504 250k(B)
RV604 250k(B)
LOUDNESS
ON
OFF
R717 330(1/2W)
GRY
J703
11
TREBLE
BASS
BALANCE
VOLUME
GRY
HEADPHONES

REF. NO. \ SERIAL NO.	TO SERIAL NO. 804000	FROM SERIAL NO. 804001
R711, 712, 811, 812	470 COMPOSITION	470 (1/2W) FUSE
R714, 715, 814, 815	1 (1/2W) FUSE	1 (1W) FUSE
C706, 806	1000/35V ELECT	2200/35V ELECT

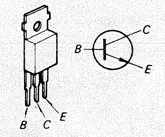
※



Q701, 801
705, 805 } **2SA678**

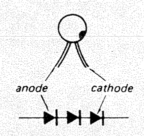


Q702, 802
704, 804 } **2SC634A**
902

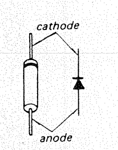


Q706, 707
806, 807 } **2SC1419**

Q901 2SC1124

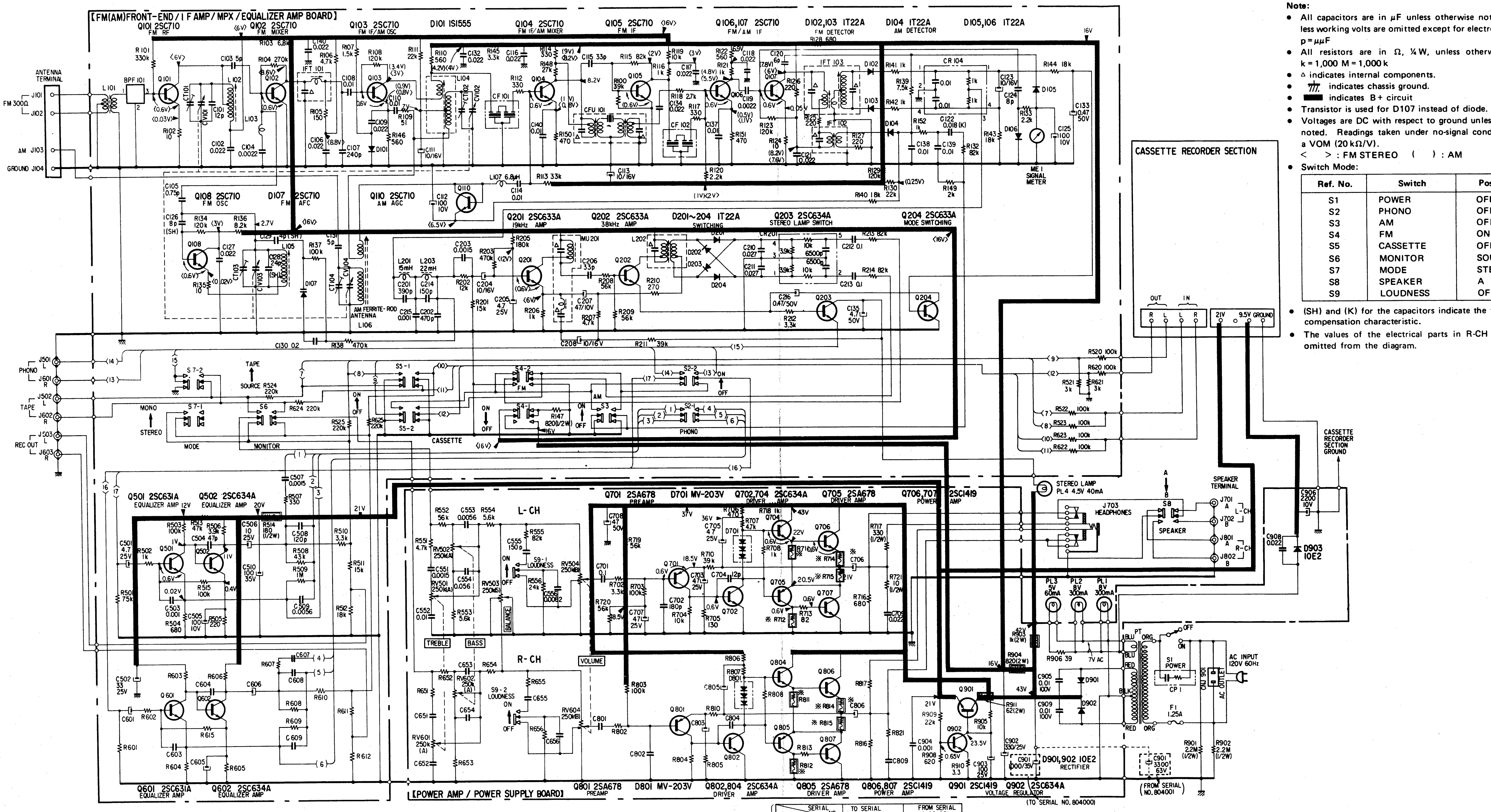

anode
cathode

D701, 801 MV-203V


cathode
anode

D901~903 10E2

4-4. SCHEMATIC DIAGRAM


[FM(AM)FRONT-END / I F AMP / MPX / EQUALIZER AMP BOARD]
Q101 2SC710 FM RF
Q102 2SC710 FM MIXER
Q103 2SC710 FM IF/AM OSC
D101 1S1555
Q104 2SC710 FM IF/AM MIXER
Q105 2SC710 FM IF
Q106,107 2SC710 FM/AM IF
D102,103 IT22A FM DETECTOR
D104 IT22A AM DETECTOR
D105,106 IT22A
ANTENNA TERMINAL
FM 300Ω
AM J103
GROUND J104
Q108 2SC710 FM OSC
D107 2SC710 FM AFC
Q110 2SC710 AM AGC
ME1 SIGNAL METER
Q201 2SC633A 19kHz AMP
Q202 2SC633A 38kHz AMP
D201~204 IT22A SWITCHING
Q203 2SC634A STEREO LAMP SWITCH
Q204 2SC633A MODE SWITCHING
AM FERRITE-ROD ANTENNA L106
CASSETTE RECORDER SECTION
OUT IN
PHONO J501 J601
TAPE J502 J602
REC OUT J503 J603
MONO STEREO MODE
MONITOR
TAPE SOURCE
CASSETTE
PHONO
FM
AM
CASSETTE RECORDER SECTION GROUND
Q501 2SC631A EQUALIZER AMP
Q502 2SC634A EQUALIZER AMP
L-CH
R-CH
TREBLE
BASS
BALANCE
VOLUME
LOUDNESS
Q701 2SA678 PREAMP
D701 MV-203V
Q702,704 2SC634A DRIVER AMP
Q705 2SA678 DRIVER AMP
Q706,707 2SC1419 POWER AMP
STEREO LAMP PL4 4.5V 40mA
SPEAKER TERMINAL
J703 HEADPHONES
SPEAKER
PL3 5V 60mA
PL2 8V 300mA
PL1 8V 300mA
S1 POWER
AC INPUT 120V 60Hz
AC OUTLET
F1 1.25A
D901,902 10E2 RECTIFIER
D903 10E2
Q601 2SC631A EQUALIZER AMP
Q602 2SC634A EQUALIZER AMP
[POWER AMP / POWER SUPPLY BOARD]
Q801 2SA678 PREAMP
D801 MV-203V
Q802,804 2SC634A DRIVER AMP
Q805 2SA678 DRIVER AMP
Q806,807 2SC1419 POWER AMP
Q901 2SC1419
Q902 2SC634A VOLTAGE REGULATOR
(TO SERIAL NO. 804000)
(FROM SERIAL NO. 804001)

※

SERIAL NO. / REF. NO.	TO SERIAL NO. 804000	FROM SERIAL NO. 804001
R711, 712, 811, 812	470 COMPOSITION	470(1/2W) FUSE
R714, 715, 814, 815	1(1/2W)FUSE	1(1W) FUSE
C706, 806	1000/35V ELECT	2200/35V ELECT

Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p = μμF
- All resistors are in Ω, ¼ W, unless otherwise noted. k = 1,000 M = 1,000 k
- △ indicates internal components.
- ⏚ indicates chassis ground.
- ▬ indicates B + circuit
- Transistor is used for D107 instead of diode.
- Voltages are DC with respect to ground unless otherwise noted. Readings taken under no-signal conditions with a VOM (20 kΩ/V).
  < > : FM STEREO ( ) : AM
- Switch Mode:

Ref. No.	Switch	Position
S1	POWER	OFF
S2	PHONO	OFF
S3	AM	OFF
S4	FM	ON
S5	CASSETTE	OFF
S6	MONITOR	SOURCE
S7	MODE	STEREO
S8	SPEAKER	A
S9	LOUDNESS	OFF

- (SH) and (K) for the capacitors indicate the temperature compensation characteristic.
- The values of the electrical parts in R-CH section are omitted from the diagram.

SECTION 5
EXPLODED VIEWS

(1)

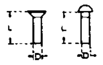
– Hardware Nomenclature –

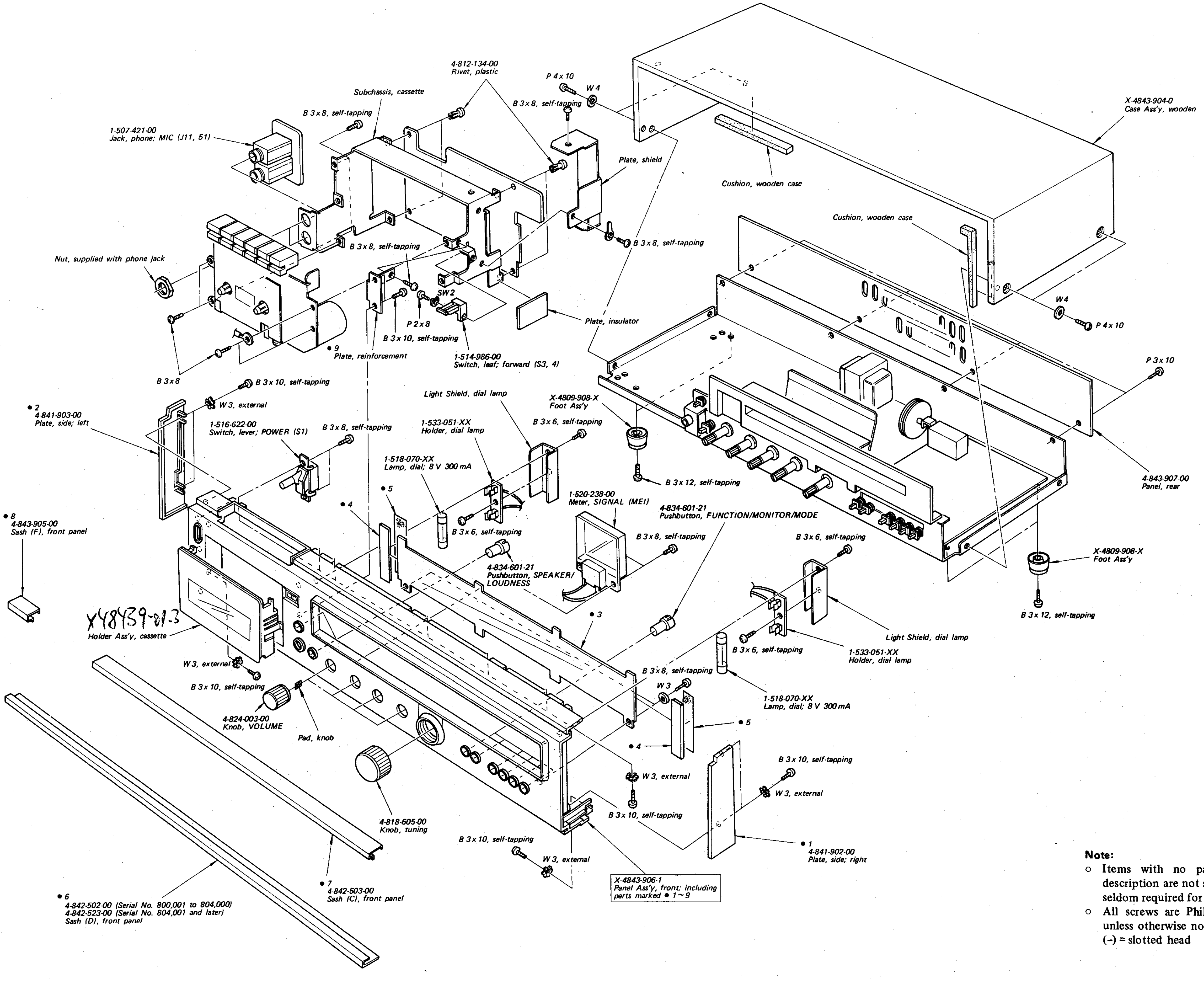
P	–	Pan Head Screw
PS	–	Pan Head Screw with Spring Washer
K	–	Flat Countersunk Head Screw
B	–	Binding Head Screw
RK	–	Oval Countersunk Head Screw
T	–	Truss Head Screw
R	–	Round Head Screw
F	–	Flat Fillister Head Screw
SC	–	Set Screw
E	–	Retaining Ring (E Washer)

W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

– Example –

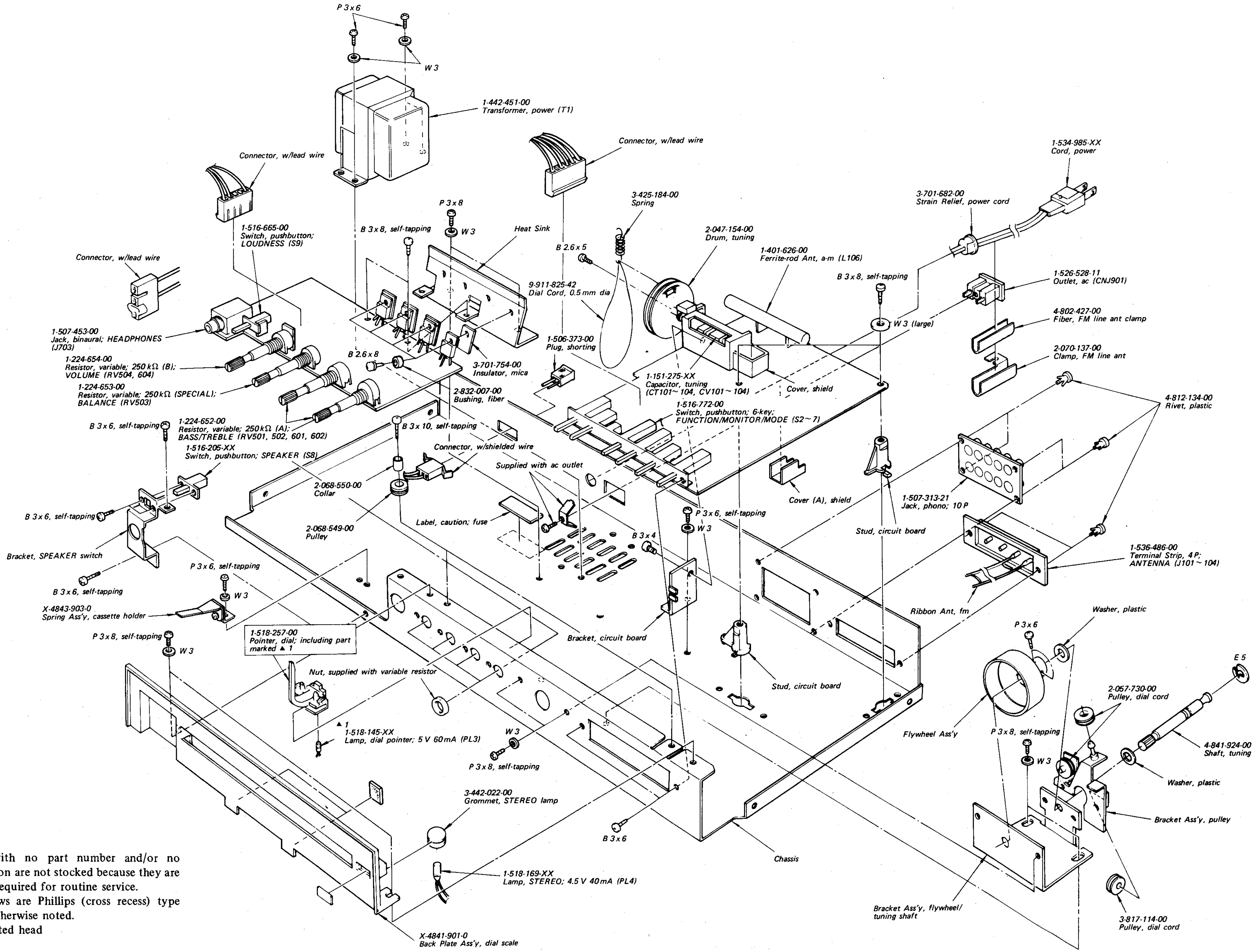
⊕ P 3x10
Type of Slot
Length in mm (L)
Diameter in mm (D)
Type of Head




4-812-134-00
Rivet, plastic
P 4 x 10
W 4
B 3 x 8, self-tapping
Subchassis, cassette
B 3 x 8, self-tapping
1-507-421-00
Jack, phone; MIC (J11, 51)
Plate, shield
Cushion, wooden case
X-4843-904-0
Case Ass'y, wooden
Cushion, wooden case
B 3 x 8, self-tapping
B 3 x 8, self-tapping
Nut, supplied with phone jack
SW2
Plate, insulator
P 2 x 8
B 3 x 10, self-tapping
W4
P 4 x 10
• 9
Plate, reinforcement
1-514-986-00
Switch, leaf; forward (S3, 4)
P 3 x 10
B 3 x 8
B 3 x 10, self-tapping
Light Shield, dial lamp
X-4809-908-X
Foot Ass'y
W 3, external
• 2
4-841-903-00
Plate, side; left
1-516-622-00
Switch, lever; POWER (S1)
B 3 x 8, self-tapping
1-533-051-XX
Holder, dial lamp
B 3 x 6, self-tapping
1-518-070-XX
Lamp, dial; 8 V 300 mA
B 3 x 12, self-tapping
4-843-907-00
Panel, rear
• 5
• 4
1-520-238-00
Meter, SIGNAL (MEI)
4-834-601-21
Pushbutton, FUNCTION/MONITOR/MODE
• 8
4-843-905-00
Sash (F), front panel
B 3 x 6, self-tapping
B 3 x 8, self-tapping
B 3 x 6, self-tapping
X-4809-908-X
Foot Ass'y
4-834-601-21
Pushbutton, SPEAKER/LOUDNESS
B 3 x 12, self-tapping
• 3
X48439-01-3
Holder Ass'y, cassette
Light Shield, dial lamp
B 3 x 6, self-tapping
1-533-051-XX
Holder, dial lamp
W 3, external
B 3 x 8, self-tapping
W 3
B 3 x 10, self-tapping
1-518-070-XX
Lamp, dial; 8 V 300 mA
4-824-003-00
Knob, VOLUME
Pad, knob
• 5
• 4
B 3 x 10, self-tapping
W 3, external
W 3, external
B 3 x 10, self-tapping
4-818-605-00
Knob, tuning
B 3 x 10, self-tapping
W 3, external
• 1
4-841-902-00
Plate, side; right
X-4843-906-1
Panel Ass'y, front; including parts marked • 1 ~ 9
• 7
4-842-503-00
Sash (C), front panel
• 6
4-842-502-00 (Serial No. 800,001 to 804,000)
4-842-523-00 (Serial No. 804,001 and later)
Sash (D), front panel

Note:
- ○ Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head

(2)


P 3 x 6
W 3
1-442-451-00
Transformer, power (T1)
Connector, w/lead wire
Connector, w/lead wire
1-534-985-XX
Cord, power
P 3 x 8
W 3
B 3 x 8, self-tapping
Heat Sink
3-425-184-00
Spring
3-701-682-00
Strain Relief, power cord
1-516-665-00
Switch, pushbutton;
LOUDNESS (S9)
B 2.6 x 5
2-047-154-00
Drum, tuning
1-401-626-00
Ferrite-rod Ant, a-m (L106)
B 3 x 8, self-tapping
1-526-528-11
Outlet, ac (CNJ901)
Connector, w/lead wire
9-911-825-42
Dial Cord, 0.5 mm dia
W 3 (large)
4-802-427-00
Fiber, FM line ant clamp
1-507-453-00
Jack, binaural; HEADPHONES
(J703)
1-506-373-00
Plug, shorting
2-070-137-00
Clamp, FM line ant
1-224-654-00
Resistor, variable; 250 kΩ (B);
VOLUME (RV504, 604)
B 2.6 x 8
3-701-754-00
Insulator, mica
1-151-275-XX
Capacitor, tuning
(CT101 ~ 104, CV101 ~ 104)
Cover, shield
1-224-653-00
Resistor, variable; 250 kΩ (SPECIAL);
BALANCE (RV503)
2-832-007-00
Bushing, fiber
4-812-134-00
Rivet, plastic
1-516-772-00
Switch, pushbutton; 6-key;
FUNCTION/MONITOR/MODE (S2 ~ 7)
B 3 x 6, self-tapping
1-224-652-00
Resistor, variable; 250 kΩ (A);
BASS/TREBLE (RV501, 502, 601, 602)
B 3 x 10, self-tapping
1-516-205-XX
Switch, pushbutton; SPEAKER (S8)
Connector, w/shielded wire
Supplied with ac outlet
1-507-313-21
Jack, phono; 10 P
2-068-550-00
Collar
Cover (A), shield
P 3 x 6, self-tapping
W 3
Stud, circuit board
B 3 x 6, self-tapping
Label, caution; fuse
2-068-549-00
Pulley
B 3 x 4
1-536-486-00
Terminal Strip, 4 P;
ANTENNA (J101 ~ 104)
Bracket, SPEAKER switch
P 3 x 6, self-tapping
W 3
B 3 x 6, self-tapping
X-4843-903-0
Spring Ass'y, cassette holder
Ribbon Ant, fm
Washer, plastic
P 3 x 8, self-tapping
W 3
Bracket, circuit board
P 3 x 6
1-518-257-00
Pointer, dial; including part
marked ▲ 1
E 5
Nut, supplied with variable resistor
Stud, circuit board
2-057-730-00
Pulley, dial cord
▲ 1
1-518-145-XX
Lamp, dial pointer; 5 V 60 mA (PL3)
W 3
P 3 x 8, self-tapping
Flywheel Ass'y
P 3 x 8, self-tapping
W 3
4-841-924-00
Shaft, tuning
Washer, plastic
3-442-022-00
Grommet, STEREO lamp
Bracket Ass'y, pulley
B 3 x 6
Chassis
1-518-169-XX
Lamp, STEREO; 4.5 V 40 mA (PL4)
Bracket Ass'y, flywheel/
tuning shaft
3-817-114-00
Pulley, dial cord
X-4841-901-0
Back Plate Ass'y, dial scale

Note:

- ○ Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

SECTION 6
ELECTRICAL PARTS LIST

SEMICONDUCTORS

Transistors

Ref. No.	Part No.	Description
Q101~108,110	2SC710	
Q201,202	2SC633A	
Q203	2SC634A	
Q204	2SC633A	
Q501,601	2SC631A	
Q502,602	2SC634A	
Q701,801	2SA678	
Q702,802	2SC634A	
Q704,804	2SC634A	
Q705,805	2SA678	
Q706,806	2SC1419	
Q707,807	2SC1419	
Q901	2SC1124	
Q902	2SC634A	

Diodes

Ref. No.	Part No.	Description
D101	1S1555	
D102~106	1T22A	
D201~204	1T22A	
D701,801	MV-203V	
D901~903	10E2	

TRANSFORMERS, COILS AND INDUCTORS

Ref. No.	Part No.	Description
CFU101	1-403-150-00	Unit, IFT/ceramic filter
IFT101	1-404-004-00	IFT, fm
IFT102	1-403-900-00	IFT, a-m
IFT103	1-403-822-21	Transformer, discriminator
L101	1-417-014-61	Balun
L103	1-420-840-00	Coil, fm antenna
L104	1-405-597-00	Coil, a-m osc
L106	1-401-626-00	Ferrite-rod Antenna, a-m
L107	1-407-188-XX	Microinductor, 6.8 μH
L201	1-407-208-XX	Microinductor, 15 mH
L202	1-425-881-00	Transformer, switching
L203	1-407-210-XX	Microinductor, 22 mH
MU201	1-425-687-00	Unit, MPX
T1	1-442-451-00	Transformer, power

CAPACITORS

All capacitors are in μF and of ceramic unless otherwise noted.
(p = μμF, elect = electrolytic)
50 or less working volts are omitted except for electrolytic type.

Ref. No.	Part No.	Description		
C101	1-102-955-11	12 p		
C102	1-101-005-11	0.022		
C103	1-102-807-11	5 p		
C104	1-101-002-11	0.0022		
C105	1-101-586-11	0.75 p		
C106	1-101-005-11	0.022		
C107	1-102-979-11	240 p		
C108	1-101-004-11	0.01		
C109	1-101-005-11	0.022		
C110	1-108-837-12	0.01		mylar
C111	1-121-651-11	10	16 V	elect
C112	1-121-414-11	100	10 V	elect
C113	1-121-651-11	10	16 V	elect
C114	1-101-004-11	0.01		
C115	1-102-969-11	33 p		
C116~118	1-101-005-11	0.022		
C119	1-101-002-11	0.0022		
C120	1-102-943-11	6 p		
C121	1-101-005-11	0.022		
C122	1-108-840-12	0.018		mylar
C123	1-121-651-11	10	16 V	elect
C124	1-102-945-11	8 p		
C125	1-121-414-11	100	10 V	elect
C126	1-102-684-11	8 p		
C127	1-101-005-11	0.022		
C128	1-101-982-11	24 p		
C129	1-102-683-11	4 p		
C130	1-101-798-11	0.2		
C131	1-102-807-11	5 p		
C132	1-101-005-11	0.022		
C133	1-121-726-11	0.47	50 V	elect
C134	1-101-005-11	0.022		
C135	1-121-396-11	4.7	50 V	elect
C136	1-101-005-11	0.022		
C201	1-102-822-11	390 p		
C202	1-102-824-11	470 p		
C203	1-102-119-11	0.0015		
C204	1-121-651-11	10	16 V	elect
C205	1-121-395-11	4.7	25 V	elect
C206	1-102-969-11	33 p		
C207	1-121-352-11	47	10 V	elect
C208	1-121-651-11	10	16 V	elect
C210,211	1-108-809-12	0.027		mylar
C212,213	1-101-797-11	0.1		
C214	1-101-361-11	150 p		
C215	1-102-074-11	0.001		
C216	1-121-726-11	0.47	50 V	elect
C501,601	1-121-395-11	4.7	25 V	elect
C502	1-121-404-11	33	25 V	elect
C503,603	1-101-001-11	0.001		
C504,604	1-101-881-11	47p		
C505,605	1-121-414-11	100	10 V	elect
C506,606	1-121-398-11	10	25 V	elect
C507,607	1-102-119-11	0.0015		
C508,608	1-101-340-11	120p		
C509,609	1-108-801-12	0.0056		mylar
C510	1-121-357-11	100	35 V	elect
C551	1-102-119-11	0.0015		
C552,652	1-102-129-11	0.01		
C553,653	1-102-126-11	0.0056		
C554,654	1-108-846-12	0.056		mylar
C555,655	1-101-124-11	150p		
C556,656	1-102-128-11	0.0082		
C701,801	1-108-849-12	0.1		mylar
C702,802	1-102-982-11	180p		
C703,803	1-121-410-11	47	25 V	elect
C704,804	1-102-955-11	12p		
C705,805	1-121-410-11	47	25 V	elect
□ C706,806	1-121-941-11	470	35 V	elect
■ C706,806	1-121-984-11	2200	35 V	elect
C707	1-121-410-11	47	25 V	elect
C708	1-123-058-11	47	50 V	elect
C709,809	1-101-005-11	0.022		
C901	1-123-945-11	1000	35 V	elect
C902	1-123-065-11	330	25 V	elect (explosion-proof)
C903	1-121-416-11	100	25 V	elect
C904	1-101-001-11	0.001		
C905	1-108-394-11	0.01	250 V	mylar
C906	1-123-074-1	2200	10 V	elect
C907	1-121-940-11	470	25 V	elect
C908	1-101-005-11	0.022		
CT101~104	1-151-275-XX	Tuning		
CV101~104				

RESISTORS

All resistors are in Ω. ¼W, regular type, carbon and composition resistors are ommitted. Check the schematic diagram for resistance values. (k = 1000, M = 1000k)

Ref. No.	Part No.	Description		
R147	1-202-571-11	820	½ W	composition
R514	1-212-988-11	180	½ W	fuse (nonflammable)
■ R711,811	1-212-998-11	470	½W	fuse (nonflammable)
■ R712,812				
□ R714,814	1-212-934-11	1	½W	fuse
□ R715,815				
■ R714,814	1-213-036-11	1	1W	fuse (nonflammable)
■ R715,815				
R717,817	1-202-561-11	330	½ W	composition
R721,821	1-202-525-11	10	½ W	composition
R901,902	1-202-723-11	2.2 M	½ W	composition
R903	1-206-664-11	1 k	2 W	metal-oxide (nonflammable)
R904	1-206-662-11	820	2 W	metal-oxide (nonflammable)
R911	1-212-977-11	62	½ W	fuse (nonflammable)

□ = Serial Nos. 800,001~804,000
■ = Serial Nos. 804,001~

Ref. No.	*Part No.*	*Description*
RV501,601	1-224-652-00	250 k (A), variable; TREBLE
RV502,602	1-224-652-00	250 k (A), variable; BASS
RV503	1-224-653-00	250 k (SPECIAL), variable; BALANCE
RV504,604	1-224-654-00	250 k (B), variable; VOLUME

SWITCHES

S1	1-516-622-00	Lever, POWER
S2~7	1-516-772-00	Pushbutton, 6-key; FUNCTION/ MONITOR/MODE
S8	1-516-205-XX	Pushbutton, SPEAKER
S9	1-516-665-00	Pushbutton, LOUDNESS

FILTERS

BPF101	1-231-249-00	Band-pass
CF101,102	1-527-220-11 ~ 51	Fm I-f, ceramic

ENCAPSULATED COMPONENTS

CP1	1-231-057-00
CR101	1-231-171-00
CR102	1-231-160-00
CR103	1-231-204-00
CR104	1-231-202-00
CR201	1-231-300-00

MISCELLANEOUS

CNJ901	1-526-528-00	Socket, ac outlet
F1	1-532-402-XX	Fuse, 1.25A
J101~104	1-536-486-00	Terminal Strip, 4-P (ANTENNA)
J501~503 J601~603 J701,702 J801,802	1-507-313-21	Jack, phono; 10-P
J703	1-507-453-00	Jack, binaural; HEADPHONE
PL1,2	1-518-070-XX	Lamp, dial; 8 V 300 mA
	1-518-257-00	Pointer, dial
	including;	
	1-518-145-XX	Lamp, dial pointer; 5 V 60 mA (PL 3)
PL4	1-518-169-XX	Lamp, STEREO; 4.5 V 40 mA
ME1	1-520-238-00	Meter, SIGNAL
	1-506-373-00	Plug, shorting
	1-533-051-XX	Holder, dial lamp
	1-534-985-XX	Cord, power

ACCESSORY

3-780-788-21	Manual, instruction

HARDWARE

Screws

All screws are Phillips (cross recess) type unless otherwise noted.

7-628-254-22	PS	2.6 x 8
7-682-147-07	P	3 x 6
7-682-148-07	P	3 x 8, self-tapping
7-682-545-00	B	3 x 4
7-682-547-04	B	3 x 6
7-682-982-00	PSW	3 x 8
7-685-145-01	P	3 x 6, self-tapping
7-685-158-01	P	4 x 6, self-tapping
7-685-160-01	P	4 x 10, self-tapping
7-685-545-21	B	3 x 6, self-tapping
7-685-546-21	B	3 x 8, self-tapping
7-685-547-21	B	3 x 10, self-tapping
7-687-510-31	PTPWH	3 x 6
7-687-521-31	PTPWH	4 x 10

Washers

7-623-108-08	W3
7-623-110-12	W4
7-623-205-31	SW2

Miscellaneous

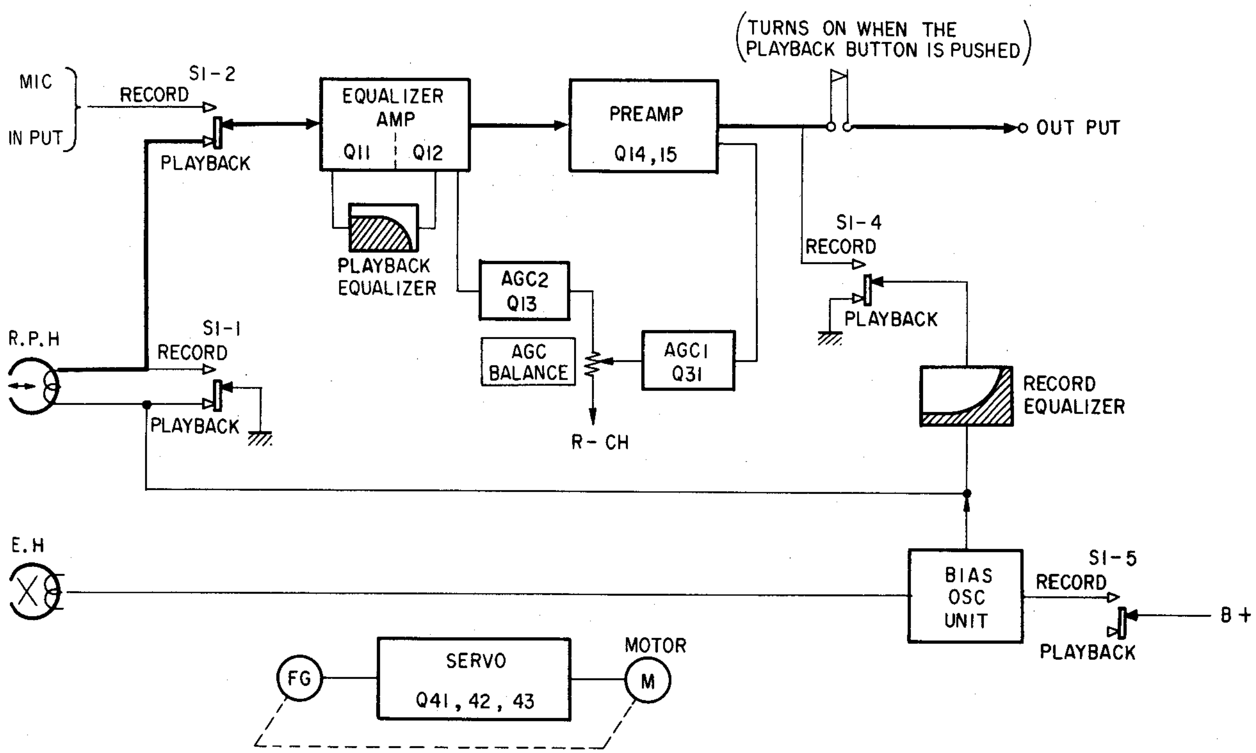
7-623-616-01	Eyelet
7-624-109-02	E5
9-911-825-42	Dial Cord, 0.5

MEMO

CASSETTE RECORDER

SECTION 7
BLOCK DIAGRAM

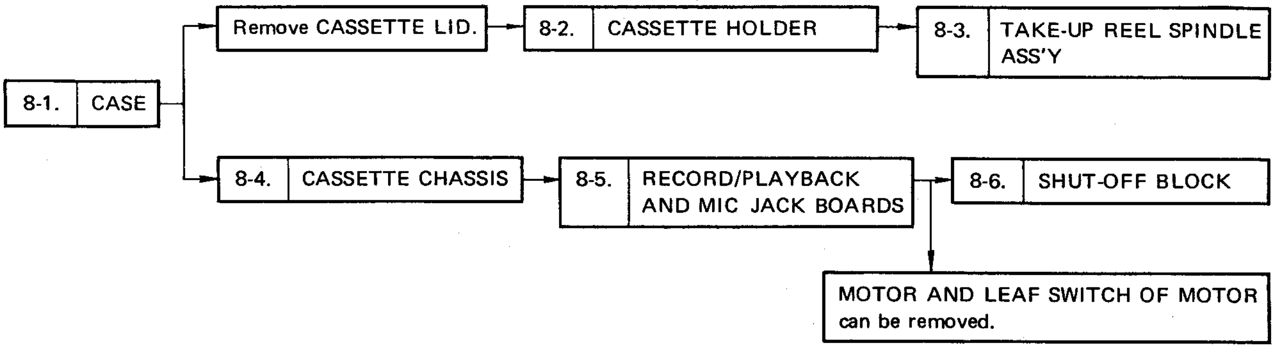
7-1. BLOCK DIAGRAM


MIC
IN PUT
S1-2
RECORD
PLAYBACK
EQUALIZER AMP
Q11
Q12
PLAYBACK EQUALIZER
PREAMP
Q14, 15
(TURNS ON WHEN THE PLAYBACK BUTTON IS PUSHED)
OUT PUT
S1-4
RECORD
PLAYBACK
AGC2
Q13
AGC BALANCE
AGC1
Q31
R-CH
R.P.H
S1-1
RECORD
PLAYBACK
RECORD EQUALIZER
E.H
BIAS OSC UNIT
S1-5
RECORD
PLAYBACK
B+
FG
SERVO
Q41, 42, 43
MOTOR
M

Note: R-CH is omitted.

SECTION 8
REMOVAL

Order of removal:


8-1. CASE
Remove CASSETTE LID.
8-2. CASSETTE HOLDER
8-3. TAKE-UP REEL SPINDLE ASS'Y
8-4. CASSETTE CHASSIS
8-5. RECORD/PLAYBACK AND MIC JACK BOARDS
8-6. SHUT-OFF BLOCK
MOTOR AND LEAF SWITCH OF MOTOR can be removed.

8-1. CASE

1. Remove ❶ , ❷ and ❸ .
2. Lift the case (❹).
3. Disconnect ❺ .
4. Remove the case (❹ and ❻).

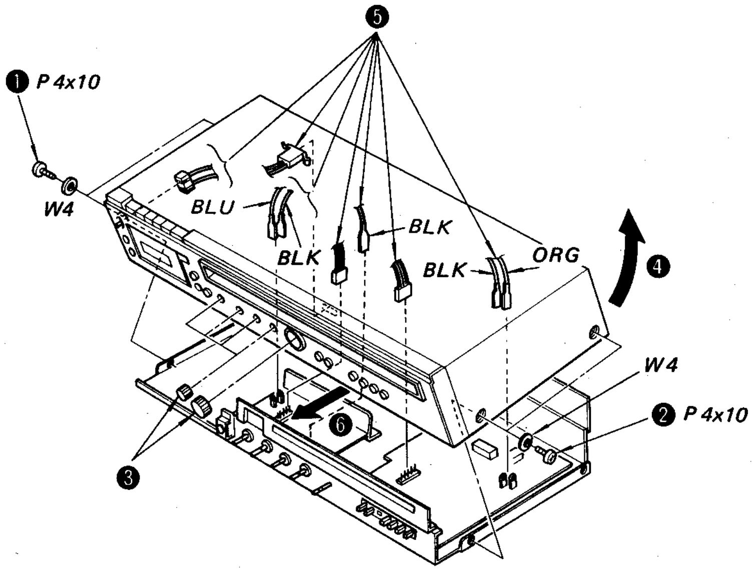

❶ P4x10
W4
❺
BLU
BLK
BLK
BLK
BLK
ORG
❹
W4
❷ P4x10
❻
❸

Fig. 8-1.

8-2. CASSETTE HOLDER

1. Remove ❶ and ❷.

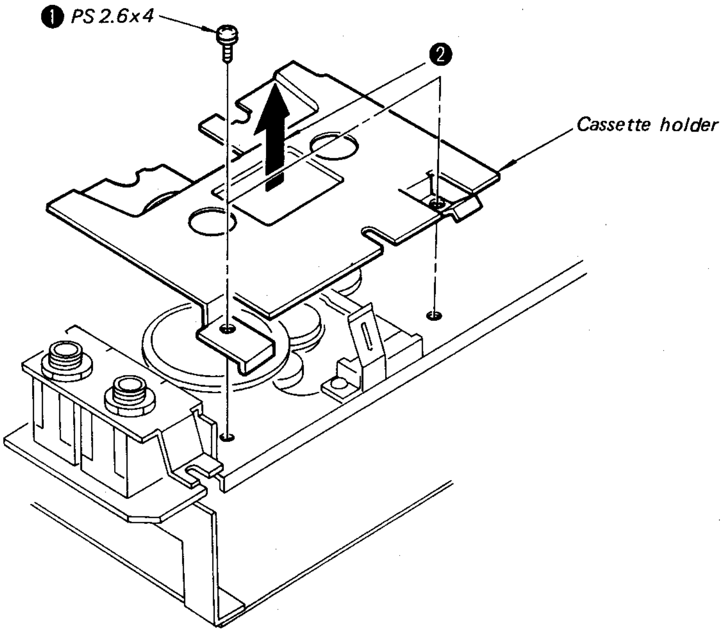

❶ PS 2.6x4
❷
Cassette holder

Fig. 8-2.

8-3. TAKE-UP REEL SPINDLE ASS'Y

1. Remove ❶ and ❷.

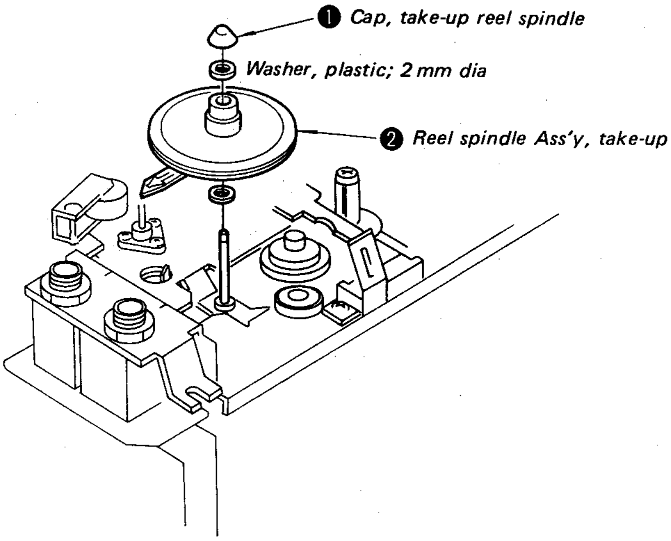

❶ Cap, take-up reel spindle
Washer, plastic; 2 mm dia
❷ Reel spindle Ass'y, take-up

Fig. 8-3.

8-4. CASSETTE CHASSIS

1. Remove ❶ and ❷.
2. Lift the cassette chassis while depressing the pushbutton (❸ and ❹).

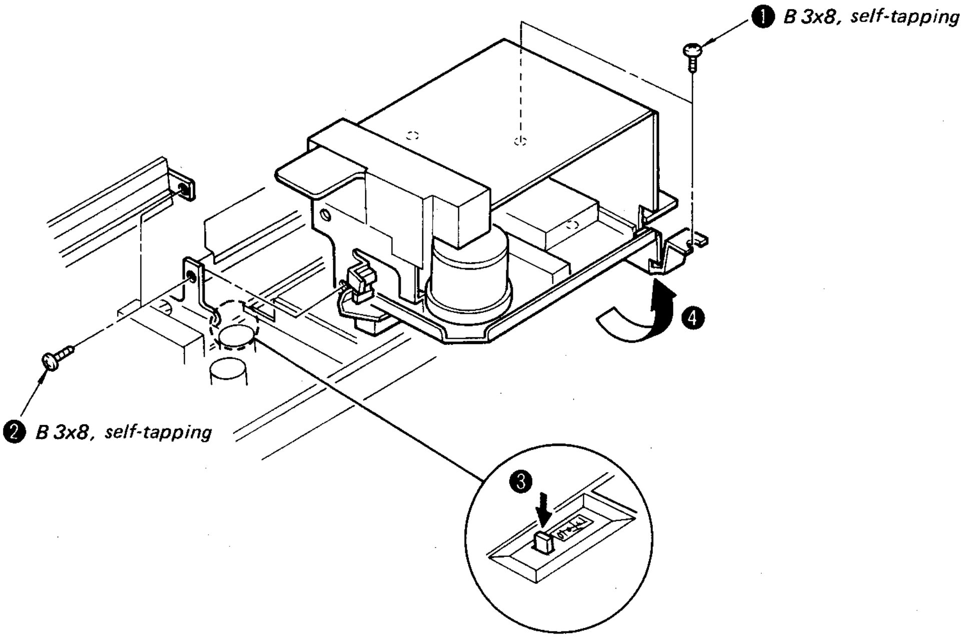

❶ B 3x8, self-tapping
❹
❷ B 3x8, self-tapping
❸

Fig. 8-4.

8-5. RECORD/PLAYBACK AND MIC JACK BOARDS

Remove ❶ ~ ❼.

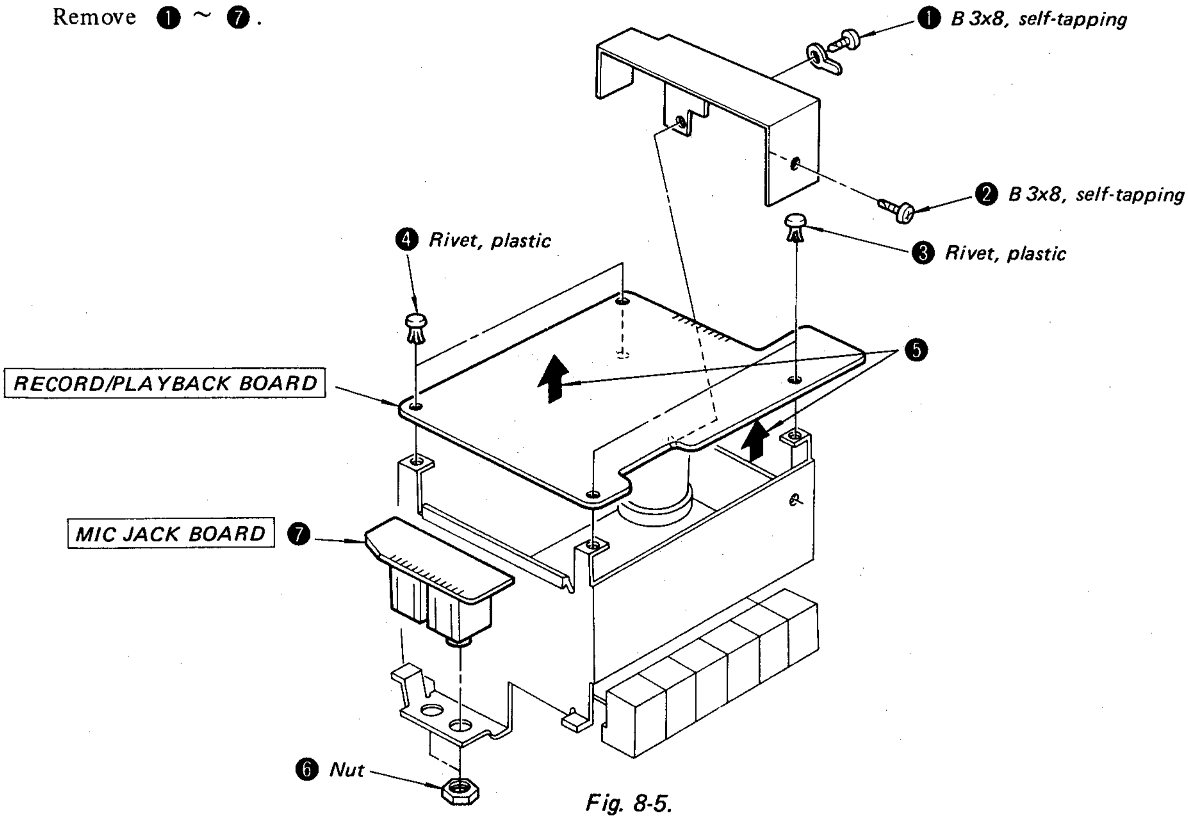

❶ B 3x8, self-tapping
❷ B 3x8, self-tapping
❹ Rivet, plastic
❸ Rivet, plastic
❺
RECORD/PLAYBACK BOARD
MIC JACK BOARD ❼
❻ Nut

Fig. 8-5.

8-6. SHUT-OFF BLOCK

1. Remove ❶ and ❷.
2. Lift the chassis (❸).

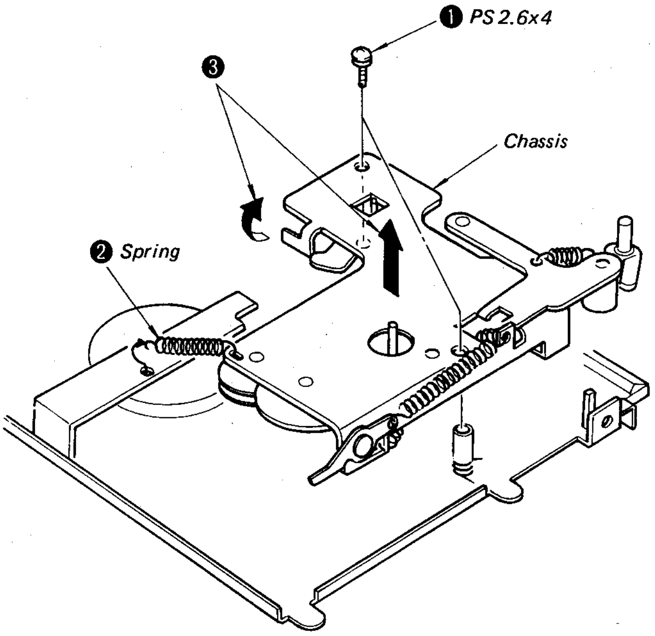

❶ PS2.6x4
❸
Chassis
❷ Spring

Fig. 8-6.

< NOTE ON SHUT-OFF BLOCK ATTACHMENT >

1. Insert Ⓐ, Ⓑ and Ⓒ as shown by the arrows.
2. Install Ⓓ at position shown below correctly and confirm that Ⓓ is clean.

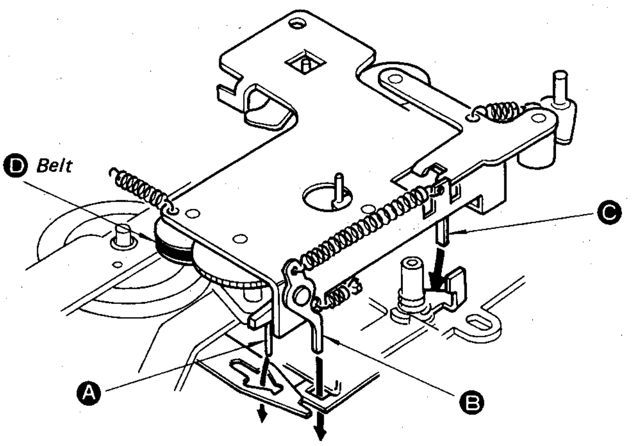


Fig. 8-7.

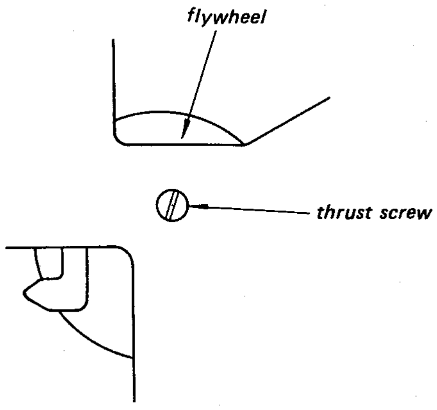
SECTION 9
ADJUSTMENTS

9-1. MECHANICAL ADJUSTMENT AND MEASUREMENT

1. Flywheel Thrust Adjustment

Procedure:

1. Mode: stop
2. Turn the thrust screw shown in figure below fully clockwise, and then back it one quarter turn.
3. Secure the thrust screw with a drop of locking compound.



2. Torque Measurement

Procedure:

Perform the torque measurement referring to the table below.

Item	Equipment	Measured Value
Forward Torque	CQ101A, SONY torque meter	25~50 g·cm (0.28~0.69 oz·inch)
Fast Forward and Rewind Torques	CQ201A, SONY torque meter	52~120 g·cm (0.72~1.66 oz·inch)
CUE and Review Torques	CQ201A, SONY torque meter	52~120 g·cm (0.72~1.66 oz·inch)

MEMO

9-2. ELECTRICAL ADJUSTMENTS

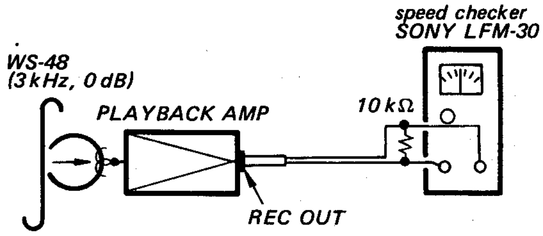
SONY TEST TAPES required for the following adjustments:

P-4-A81 (6.3 kHz, -10 dB)
P-4-L81 (333 Hz, 0 dB)
WS-48 (3 kHz)

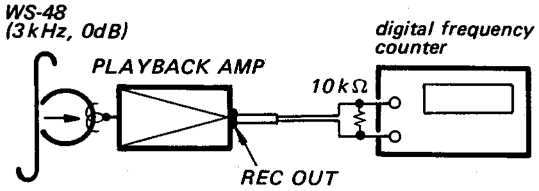
1. Tape Speed Adjustment

Procedure

1. Mode: playback


speed checker
SONY LFM-30
WS-48
(3kHz, 0dB)
PLAYBACK AMP
10kΩ
REC OUT

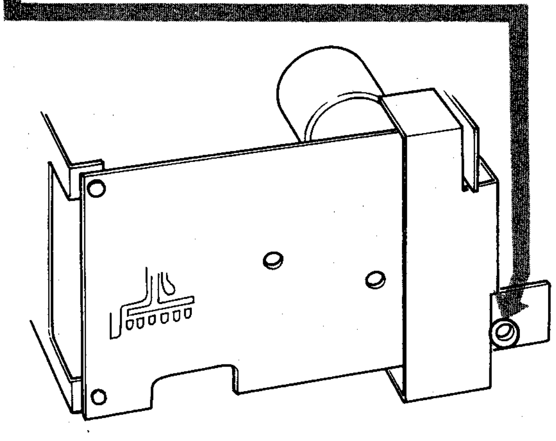
or


WS-48
(3kHz, 0dB)
digital frequency
counter
PLAYBACK AMP
10kΩ
REC OUT

● Adjust VR41 to obtain the value specified below on the speed checker or the digital frequency counter.

Specification:

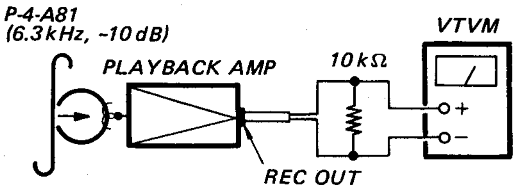
Speed checker	Digital frequency counter
-2 ~ +2 %	2940 ~ 3060 Hz



2. Record/playback Head Height Adjustment

Procedure:

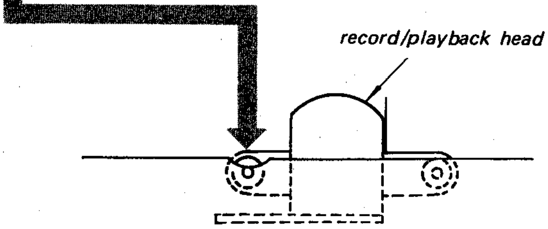
1. Mode: playback


P-4-A81
(6.3kHz, -10dB)
VTVM
PLAYBACK AMP
10kΩ
+
−
REC OUT

● Adjust the screw for the both maximum output levels of L-CH and R-CH.

● If one position of the screw is different from the other, set the screw at the center of two positions.

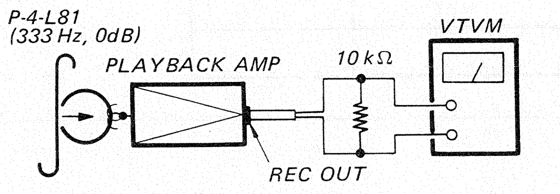
4. Secure the screw with a drop of locking compound.


record/playback head

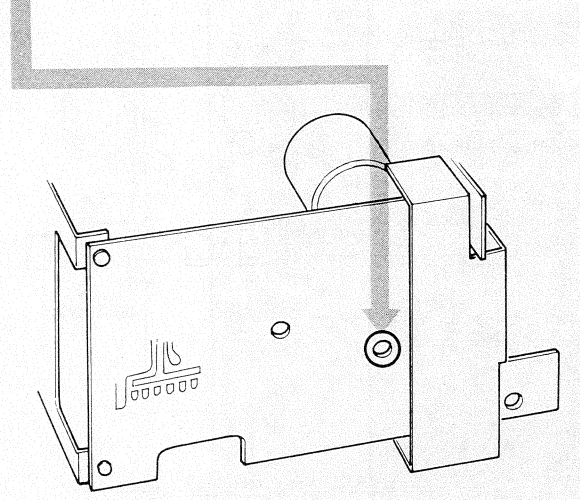
3. Playback Level Adjustment

Procedure:

1. Mode: playback


P-4-L81
(333 Hz, 0dB)
PLAYBACK AMP
10 kΩ
VTVM
REC OUT

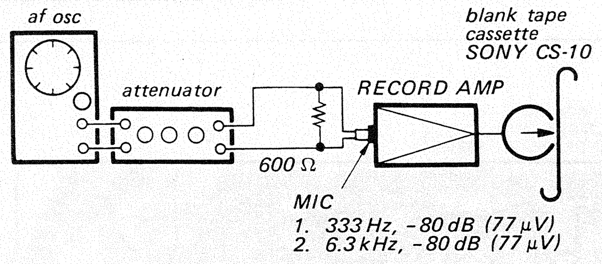
2. Confirm that the output level of L-CH is -12 ~ -4 dB (0.19 ~ 0.49 V).
3. Adjust VR11 to make the output levels of L-CH and R-CH equal. A difference of 0.5 dB is allowable between the two output levels.



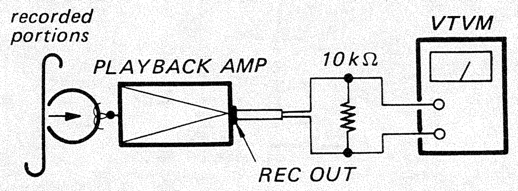
4. Record Bias Adjustment

Procedure:

1. The following adjustments should be performed for the both L-CH and R-CH sections.
2. Mode: record


af osc
attenuator
600 Ω
RECORD AMP
blank tape cassette SONY CS-10
MIC
1. 333 Hz, -80 dB (77 μV)
2. 6.3 kHz, -80 dB (77 μV)

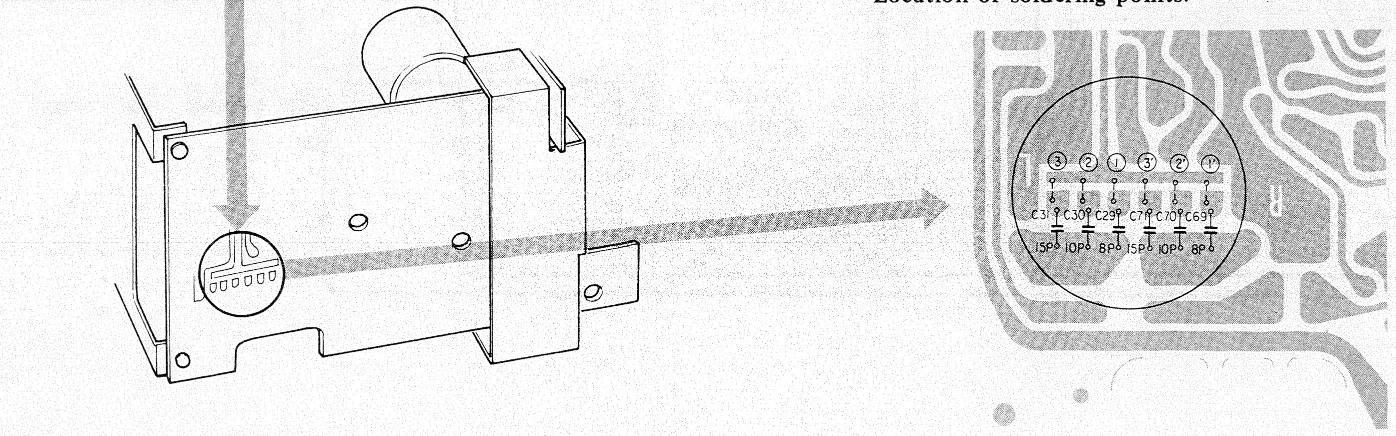
3. Mode: playback


recorded portions
PLAYBACK AMP
10 kΩ
VTVM
REC OUT

4. Referring to the table at right, select one combination of soldering points to make the 333 Hz and 6.3 kHz output levels equal. A difference of 2 dB is allowable between two output levels.

combination of soldering points		capacitance	6.3 kHz output level
L-CH	R-CH		
①	①'	8 pF	↑ increase
②	②'	10 pF	
③	③'	15 pF	
① + ②	①' + ②'	18 pF	
① + ③	①' + ③'	23 pF	
② + ③	②' + ③'	25 pF	
① + ② + ③	①' + ②' + ③'	33 pF	↓ decrease

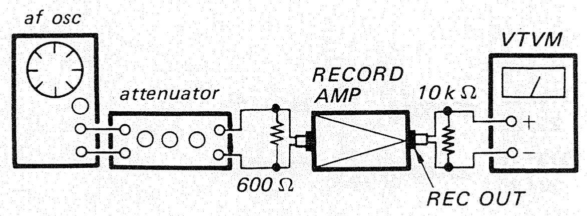
Location of soldering points:


③ ② ① ③' ②' ①'
C31 C30 C29 C71 C70 C69
15P 10P 8P 15P 10P 8P
R

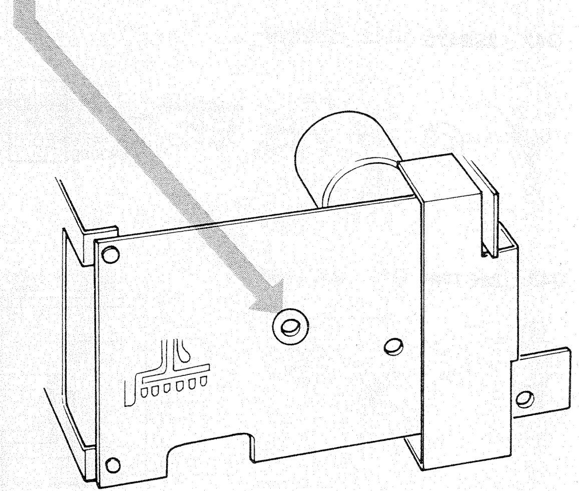
5. AGC Balance Adjustment

Procedure:

1. Mode: record


af osc
attenuator
600 Ω
RECORD AMP
10 kΩ
VTVM
+
−
REC OUT

2. Adjust VR31 to make the L-CH and R-CH output levels equal. A difference of 0.5 dB is allowable between two output levels.



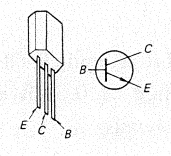
SECTION 10
DIAGRAMS

10-1. MOUNTING DIAGRAM

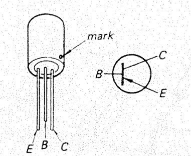
– Conductor Side –

D	41	42						21	22 12	11
Q	41 43	42	21 11	22 12	13	23	24 14	25	15	31

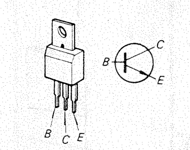
Q11, 12, 21, 22 } 2SC631A
Q13~15, 23~25 } 2SC634A



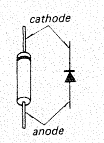
Q42 2SB475

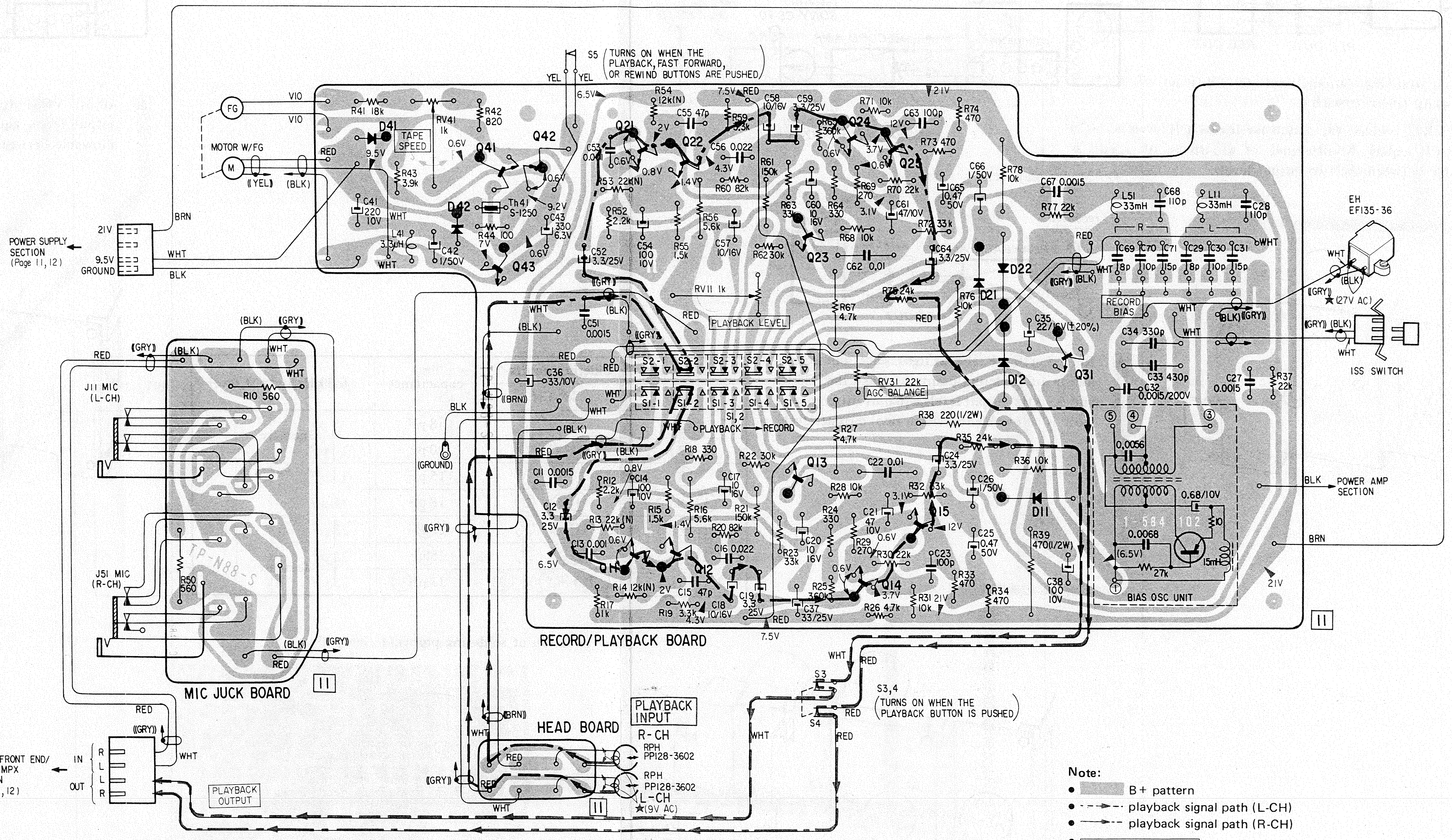

mark
B
C
E
E B C

Q43 2SC1761

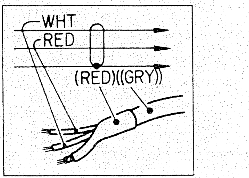


D11, 12, 21, 22 } 1S1555
D42 10E2

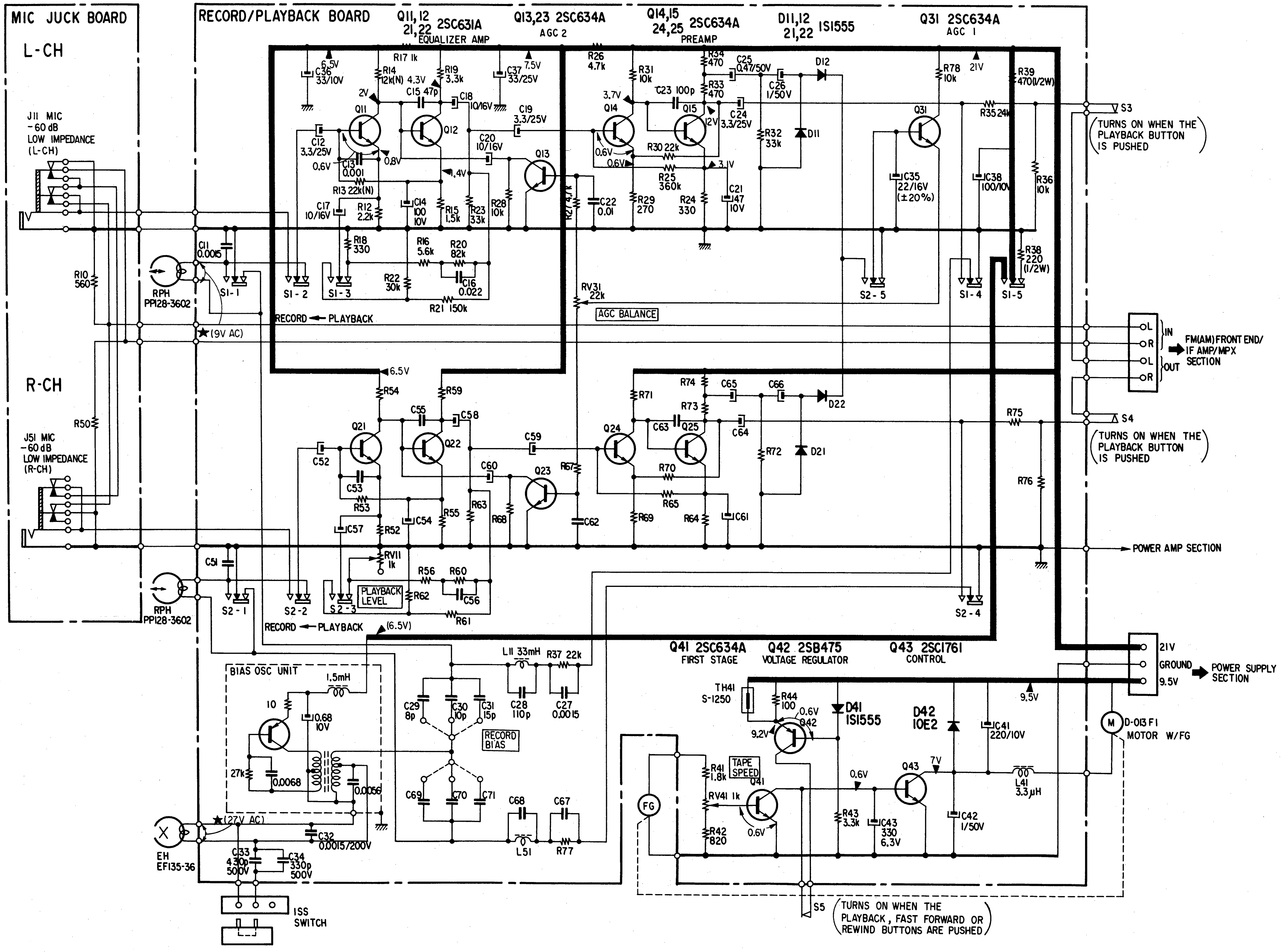

cathode
anode


S5 (TURNS ON WHEN THE PLAYBACK, FAST FORWARD, OR REWIND BUTTONS ARE PUSHED)
YEL
FG
M
MOTOR W/FG
VIO
RED
(YEL)
(BLK)
POWER SUPPLY SECTION (Page 11, 12)
21V
9.5V
GROUND
BRN
WHT
BLK
TAPE SPEED
D41
D42
Q41
Q42
Q43
RV41 1k
R41 18k
R42 820
R43 3.9k
R44 100
Th41 S-1250
L41 3.3μH
C41 220 10V
C42 1/50V
C43 330 6.3V
Q21
Q22
Q23
Q24
Q25
Q31
Q11
Q12
Q13
Q14
Q15
D11
D12
D21
D22
RV11 1k
PLAYBACK LEVEL
RV31 22k
AGC BALANCE
S2-1 S2-2 S2-3 S2-4 S2-5
S1-1 S1-2 S1-3 S1-4 S1-5
S1, 2 PLAYBACK → RECORD
RECORD BIAS
L51 33mH
L11 33mH
C35 22/16V(±20%)
C33 430p
C32 0.0015/200V
R38 220(1/2W)
R39 470(1/2W)
BIAS OSC UNIT
1-584-102
EH EF135-36
(27V AC)
ISS SWITCH
POWER AMP SECTION
RECORD/PLAYBACK BOARD
J11 MIC (L-CH)
J51 MIC (R-CH)
R10 560
R50 560
TP-N88-S
MIC JUCK BOARD
(GROUND)
HEAD BOARD
PLAYBACK INPUT
R-CH
RPH PP128-3602
L-CH
(9V AC)
PLAYBACK OUTPUT
FM(AM) FRONT END/ IF AMP/MPX SECTION (Page 11, 12)
IN
OUT
R L L R
S3
S4
S3, 4 (TURNS ON WHEN THE PLAYBACK BUTTON IS PUSHED)
GRY
BLK
II

Note:
- ▨ B+ pattern
- -·-·-▶- playback signal path (L-CH)
- ——▶— playback signal path (R-CH)
-


WHT
RED
(RED)((GRY))

10-2. SCHEMATIC DIAGRAM


MIC JUCK BOARD
L-CH
J11 MIC -60 dB LOW IMPEDANCE (L-CH)
R10 560
R-CH
R50
J51 MIC -60 dB LOW IMPEDANCE (R-CH)
RECORD/PLAYBACK BOARD
Q11,12 21,22 2SC631A EQUALIZER AMP
Q13,23 2SC634A AGC 2
Q14,15 24,25 2SC634A PREAMP
D11,12 21,22 1S1555
Q31 2SC634A AGC 1
RPH PP128-3602
S1-1
S1-2
S1-3
S1-4
S1-5
S2-1
S2-2
S2-3
S2-4
S2-5
RECORD ← PLAYBACK
★(9V AC)
AGC BALANCE
RV31 22k
PLAYBACK LEVEL
RV11 1k
S3
TURNS ON WHEN THE PLAYBACK BUTTON IS PUSHED
S4
TURNS ON WHEN THE PLAYBACK BUTTON IS PUSHED
L R L R
IN
OUT
FM(AM) FRONT END/ IF AMP/MPX SECTION
POWER AMP SECTION
21V
GROUND
9.5V
POWER SUPPLY SECTION
BIAS OSC UNIT
1.5mH
RECORD BIAS
L11 33mH
R37 22k
L51
R77
★(27V AC)
EH EF135-36
ISS SWITCH
Q41 2SC634A FIRST STAGE
Q42 2SB475 VOLTAGE REGULATOR
Q43 2SC1761 CONTROL
TH41 S-1250
D41 1S1555
D42 10E2
TAPE SPEED
RV41 1k
L41 3.3μH
FG
M D-013F1 MOTOR W/FG
S5
TURNS ON WHEN THE PLAYBACK, FAST FORWARD OR REWIND BUTTONS ARE PUSHED

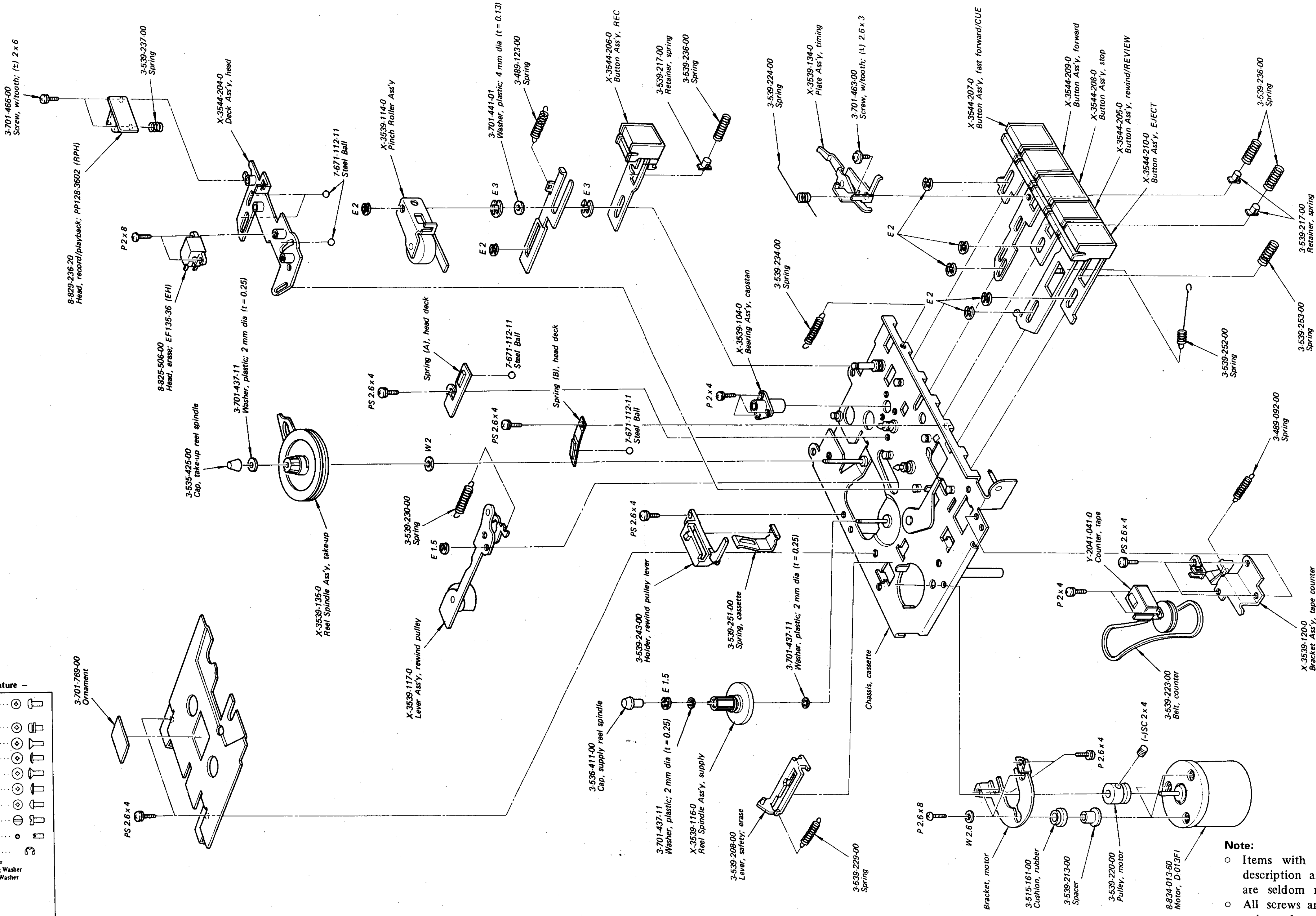
Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p = μμF
- All resistors are in Ω, ¼ W, unless otherwise noted. k = 1,000 M = 1,000 k
- ⏚ indicates chassis ground.
- (N) indicates a low-noise resistor.
- ▬ indicates B + circuit.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20 kΩ/V). Readings in ( ) are in record mode. no mark: common
- Voltage variations may be noted due to normal production tolerances.
- AC voltage readings on bias oscillator circuit are taken with a VTVM.
- Voltage between base and emitter are measured with 2.5 V range.
- The values of the electrical parts in R-CH section of RECORD/PLAYBACK BOARD are omitted from the diagram.
- Switch Mode:

Ref. No.	Switch	Position
S1, 2	RECORD/PLAYBACK	PLAYBACK
S3, 4	PLAYBACK	OFF
S5	MOTOR	OFF

SECTION 11
EXPLODED VIEWS

(1)


3-701-466-00 Screw, w/tooth; (±) 2 x 6
8-829-236-20 Head, record/playback; PP128-3602 (RPH)
3-539-237-00 Spring
P 2 x 8
X-3544-204-0 Deck Ass'y, head
8-825-506-00 Head, erase; EF135-36 (EH)
7-671-112-11 Steel Ball
3-701-437-11 Washer, plastic; 2 mm dia (t = 0.25)
3-535-425-00 Cap, take-up reel spindle
X-3539-135-0 Reel Spindle Ass'y, take-up
X-3539-114-0 Pinch Roller Ass'y
E 2
W 2
PS 2.6 x 4
Spring (A), head deck
7-671-112-11 Steel Ball
PS 2.6 x 4
3-539-230-00 Spring
E 1.5
X-3539-117-0 Lever Ass'y, rewind pulley
3-701-441-01 Washer, plastic; 4 mm dia (t = 0.13)
E 3
E 2
3-489-123-00 Spring
Spring (B), head deck
7-671-112-11 Steel Ball
X-3544-206-0 Button Ass'y, REC
E 3
3-539-217-00 Retainer, spring
3-539-236-00 Spring
3-701-769-00 Ornament
PS 2.6 x 4
PS 2.6 x 4
3-539-243-00 Holder, rewind pulley lever
3-536-411-00 Cap, supply reel spindle
E 1.5
3-701-437-11 Washer, plastic; 2 mm dia (t = 0.25)
X-3539-116-0 Reel Spindle Ass'y, supply
3-539-251-00 Spring, cassette
3-701-437-11 Washer, plastic; 2 mm dia (t = 0.25)
3-539-208-00 Lever, safety; erase
3-539-229-00 Spring
3-539-224-00 Spring
3-539-234-00 Spring
X-3539-104-0 Bearing Ass'y, capstan
P 2 x 4
X-3539-134-0 Plate Ass'y, timing
3-701-463-00 Screw, w/tooth; (±) 2.6 x 3
Chassis, cassette
E 2
E 2
X-3544-207-0 Button Ass'y, fast forward/CUE
X-3544-209-0 Button Ass'y, forward
X-3544-208-0 Button Ass'y, stop
X-3544-205-0 Button Ass'y, rewind/REVIEW
X-3544-210-0 Button Ass'y, EJECT
3-539-236-00 Spring
3-539-217-00 Retainer, spring
3-539-253-00 Spring
3-539-252-00 Spring
3-489-092-00 Spring
Y-2041-041-0 Counter, tape
PS 2.6 x 4
P 2 x 4
X-3539-120-0 Bracket Ass'y, tape counter
3-539-223-00 Belt, counter
(–)SC 2 x 4
P 2.6 x 4
P 2.6 x 8
W 2.6
Bracket, motor
3-515-161-00 Cushion, rubber
3-539-213-00 Spacer
3-539-220-00 Pulley, motor
8-834-013-60 Motor, D-013F1

– Hardware Nomenclature –

P – Pan Head Screw
PS – Pan Head Screw with Spring Washer
K – Flat Countersunk Head Screw
B – Binding Head Screw
RK – Oval Countersunk Head Screw
T – Truss Head Screw
R – Round Head Screw
F – Flat Fillister Head Screw
SC – Set Screw
E – Retaining Ring (E Washer)
W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

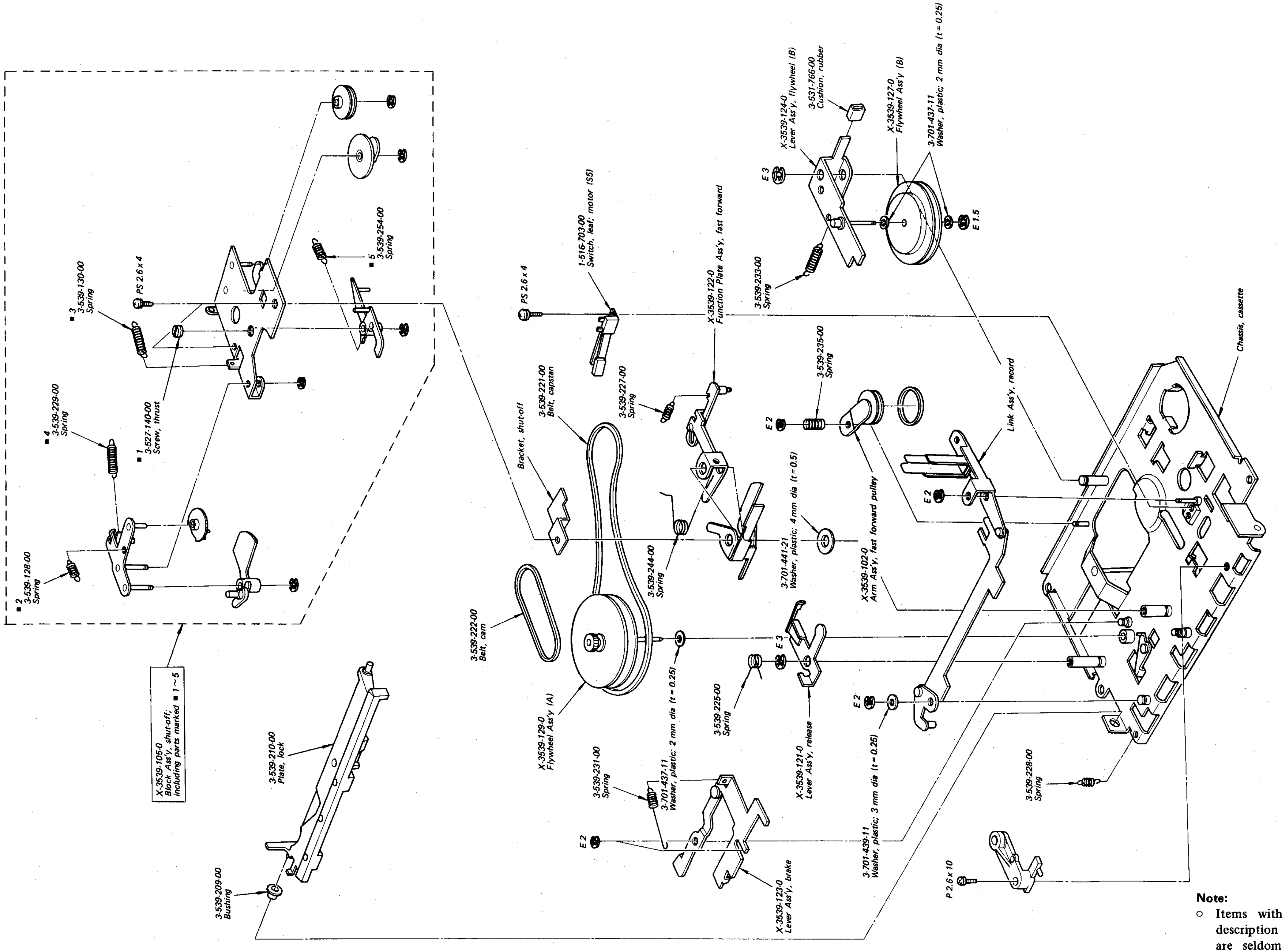
– Example –

⊕ P 3x10
Type of Slot
Length in mm (L)
Diameter in mm (D)
Type of Head

Note:

- ○ Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- ○ All screws are Phillips (cross recess) type unless otherwise noted. (-) = slotted head

(2)


PS 2.6 x 4
■ 3 3-539-130-00 Spring
■ 4 3-539-229-00 Spring
■ 1 3-527-140-00 Screw, thrust
■ 5 3-539-254-00 Spring
■ 2 3-539-128-00 Spring
X-3539-105-0 Block Ass'y, shut-off; including parts marked ■ 1 ~ 5
3-539-210-00 Plate, lock
3-539-209-00 Bushing
3-539-222-00 Belt, cam
X-3539-129-0 Flywheel Ass'y (A)
3-539-221-00 Belt, capstan
Bracket, shut-off
PS 2.6 x 4
1-516-703-00 Switch, leaf; motor (S5)
X-3539-122-0 Function Plate Ass'y, fast forward
3-539-227-00 Spring
3-539-244-00 Spring
3-701-441-21 Washer, plastic; 4 mm dia (t = 0.5)
3-701-437-11 Washer, plastic; 2 mm dia (t = 0.25)
3-539-231-00 Spring
E 2
3-539-225-00 Spring
E 3
X-3539-121-0 Lever Ass'y, release
X-3539-123-0 Lever Ass'y, brake
3-701-439-11 Washer, plastic; 3 mm dia (t = 0.25)
E 2
E 2
3-539-235-00 Spring
X-3539-102-0 Arm Ass'y, fast forward pulley
E 2
Link Ass'y, record
3-539-233-00 Spring
E 3
X-3539-124-0 Lever Ass'y, flywheel (B)
3-531-766-00 Cushion, rubber
X-3539-127-0 Flywheel Ass'y (B)
3-701-437-11 Washer, plastic; 2 mm dia (t = 0.25)
E 1.5
Chassis, cassette
3-539-228-00 Spring
P 2.6 x 10

Note:

- ○ Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

SECTION 12
ELECTRICAL PARTS LIST

SEMICONDUCTORS

Transistors

Ref. No.	*Part No.*	*Description*
Q11,21		2SC631A
Q12,22		
Q13,23		2SC633A
Q14,24		
Q15,25		
Q31,41		
Q42		2SB475
Q43		2SC1761

Diodes

Ref. No.	*Part No.*	*Description*
D11,21		1S1555
D12,22		
D41		
D42		10E-2

Thermistor

Ref. No.	*Part No.*	*Description*
Th41	1-800-198-XX	S-1250

CAPACITORS

All capacitors are in μF and of electrolytic unless otherwise noted. (p = μμF) 50 or less working volts are omitted except for electrolytic type.

Ref. No.	*Part No.*	*Description*		
C11,51	1-102-119-11	0.0015		ceramic
C12,52	1-121-392-11	3.3	25 V	
C13,53	1-101-001-11	0.001		ceramic
C14,54	1-121-414-11	100	10 V	
C15,55	1-101-881-11	47 p		ceramic
C16,56	1-108-841-12	0.022		mylar
C17,57	1-121-651-11	10	16 V	
C18,58	1-121-651-11	10	16 V	
C19,59	1-121-392-11	3.3	25 V	
C20,60	1-121-651-11	10	16 V	
C21,61	1-121-352-11	47	10 V	
C22,62	1-102-129-11	0.01		ceramic
C23,63	1-102-975-11	100 p		ceramic
C24,64	1-121-392-11	3.3	25 V	
C25,65	1-121-726-11	0.47	50 V	
C26,66	1-121-391-11	1	50 V	
C27,67	1-102-119-11	0.0015		ceramic
C28,68	1-102-815-11	110 p		ceramic
C29,69	1-102-810-11	8 p		ceramic
C30,70	1-102-954-11	10 p		ceramic
C31,71	1-102-956-11	15 p		ceramic
C32	1-108-682-12	0.0015	200 V	mylar
C33	1-107-200-11	430 p	500 V	silvered mica
C34	1-107-006-11	330 p	500 V	silvered mica
C35	1-121-990-11	22	16 V	
C36	1-121-402-11	33	10 V	
C37	1-121-404-11	33	25 V	
C38	1-121-414-11	100	10 V	
C41	1-121-420-11	220	10 V	
C42	1-121-391-11	1	50 V	
C43	1-121-751-11	330	6.3 V	

RESISTORS

All resistors are in ohms. Regular-type ¼ W carbon resistors are omitted. Check schematic diagram for resistance values. (k = 1000)

Ref. No.	*Part No.*	*Description*
R38	1-202-557-11	220 ½W composition
R39	1-202-565-11	470 ½W composition
VR11,41	1-224-642-XX	1 k, adjustable; PLAYBACK LEVEL/TAPE SPEED
VR31	1-224-646-XX	22 k, adjustable; AGC BALANCE

SWITCHES

Ref. No.	*Part No.*	*Description*
S1,2	1-514-254-00	Slide, record/playback
S3,4	1-514-986-00	Leaf, forward
S5	1-516-703-00	Leaf, motor

MISCELLANEOUS

Ref. No.	*Part No.*	*Description*
J11,51	1-507-421-00	Jack, phone; MIC (J11, 51)
L11,51	1-407-212-XX	Microinductor, 33 mH
L41	1-407-184-00	Microinductor, 3.3 μH
EH	8-825-506-00	Head, erase; EF135-36
RPH	8-829-236-20	Head, record/playback; PP128-3602
M	8-834-013-60	Motor, D-013F1
	1-464-005-00	Unit, bias osc
	1-551-014-51	Connector, w/lead wire
	1-551-020-91	Connector, w/lead wire
	1-551-151-00	Connector, w/lead wire

HARDWARE

SCREWS

All screws are Phillips (cross recess) type unless otherwise noted.

Ref. No.	*Part No.*	*Description*
	7-621-255-25	P 2 x 4
	7-621-255-51	P 2 x 8
	7-621-259-15	P 2.6 x 3
	7-621-259-65	P 2.6 x 10
	7-621-959-55	PWH 2.6 x 8
	7-621-971-05	PSP 2 x 4
	7-628-253-95	PS 2.6 x 4
	7-683-127-00	(-) SC 2 x 4
	7-685-546-11	B 3 x 8, self-tapping

WASHERS

Ref. No.	*Part No.*	*Description*
	7-623-110-12	W 4
	7-623-207-22	SW 2.6

RETAINING RINGS

Ref. No.	*Part No.*	*Description*
	7-624-102-01	E 1.5
	7-624-104-01	E 2
	7-624-106-01	E 3
	7-671-112-11	Steel Ball

Sony Corporation

© 1975

5H0628-1
Printed in Japan